DOCUMENT RESUME

ED 288 293	EC 200 764

TITLE	Living with Asthma: Part I, Manual for Teaching Parents the Self-Management of Childhood Asthma.
INSTITUTION	National Heart, Lung, and Blood Inst. (DHHS/NIH), Bethesda, MD. Div. of Lung Diseases.
REPORT NO	NIH-86-2364
PUB DATE	Apr 86
CONTRACT	NO1-HR-7-2972
NOTE	381p.; For Part 2, the Manual for Teaching Children, see EC 200 765.
PUB TYPE	Guides - Classroom Use - Materials (For Learner) (051) -- Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01/PC16 Plus Postage.
DESCRIPTORS	*Asthma; *Behavior Modification; Drug Therapy; Elementary Education; Parent Child Relationship; *Parent Education; Problem Solving; *Self Care Skills; *Self Help Programs; Workshops
IDENTIFIERS	*Child Health Care

ABSTRACT

The Living with Asthma Program is designed to teach asthma self-management skills to children (ages 8-12) with asthma and to give their parents the knowledge and behavior modification skills to help their children take over responsibility for managing the condition. Both groups receive training in problem solving and in ways to improve family interactions that relate to the management of the child's asthma. The parents participate in eight sessions which utilize a variety of teaching techniques, including lecture, discussion, role playing, decision making and problem solving, modeling, homework, audiotapes, written handouts, and visual materials. Topics of the sessions are: (1) understanding the nature of asthma; (2) medication management of asthma; (3) basic concepts of learning, including positive reinforcement; (4) behavioral terms and techniques useful for self-management; (5) antecedent conditions; (6) concurrent conditions; (7) possible consequences of asthma; and (8) problem solving. The manual provides an overall leader's guide plus materials specifically designed for teaching the topics covered in each session, including a summary of goals and resources, a session activity list, extensive teaching notes and background material, visual aids, and handouts to be copied and distributed to participants. (VW)

****
*   Reproductions supplied by EDRS are the best that can be made   *
*   from the original document.   *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

ED288293

Living with Asthma

Part 1. Manual for Teaching Parents The Self-Management of Childhood Asthma

Supported by
Division of Lung Diseases
National Heart, Lung, and Blood Institute
Contract Number NO1-HR-7-2972

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

NIH Publication No. 86-2364
April 1986

EC 200764

BEST COPY AVAILABLE

Table of Contents

Introduction to the Living with Asthma Program Page

What is Living with Asthma? 1
What is Asthma Self-Management? 2

Part 1. Manual for Teaching Parents

Leader's Guide 7

Session 1 27
Session 2 109
Session 3 165
Session 4 187
Session 5 239
Session 6 321
Session 7 385
Session 8 405

Part 2. Manual for Teaching Children

Leader's Guide 1

Session 1 9
Session 2 71
Session 3 129
Session 4 151
Session 5 185
Session 6 225
Session 7 249
Session 8 339

INTRODUCTION TO THE LIVING WITH ASTHMA PROGRAM

What is Living with Asthma?

Living with Asthma is a program for teaching asthma self-management skills to children with asthma and their parents. It is based on the program developed by Dr. Thomas L. Creer and associates at the National Asthma Center in Denver, Colorado, and was originally given weekly in eight 80-minute sessions. Two teachers are needed to present the program, as parents meet separately from children. Each group learns basic information and skills presented in a fashion appropriate to their age and point of view. Two complete teaching manuals are provided: one for parents' groups and one for children.

The Living with Asthma curriculum is designed with a two-part focus. The first two sessions, for both parents and children, present basic information about asthma, its management, and its medications. The following sessions shift focus to methods for developing self-management behaviors.

The underlying philosophy of the Living with Asthma program is to teach asthma self-management skills to children and to give parents the knowledge and behavior modification skills to help their children take over responsibility for managing the condition. Both groups receive training in problem solving and in ways to improve family interactions that relate to the management of the child's asthma. A comparative outline of the children's and parents' sessions appears below:

Session	**Parents**	**Children**
1	Basic Information about Asthma	Basic Information about Asthma
2	Medications	Medications
3	Reinforcement	Becoming Good Observers and Early Warning Signs
4	Social Learning Theory	Early Warning Signs and Remembering
5	Antecedent Conditions	Triggers
6	Concurrent Conditions	Plans for Helping Your Asthma
7	Possible Consequences of Asthma	Emergency Situations
8	Problem Solving	Review and Farewell

A variety of teaching techniques are used throughout the parents' sessions. These include lecture, discussion, role playing, decisionmaking and problem solving, modeling, homework, audiotapes, written handouts, and visual materials. For children, learning activities include games, illustrated notebooks, demonstration materials, situation cards, Marvin Marvelous stories, Dr. Q's newsletter, and opportunities for lecture and discussion.

Materials in the children's manual of the Living with Asthma program were designed for use with children 8 to 12 years of age. If a teen group is organized, materials from the parents' manual can be used and adapted to reflect the concerns of adolescents.

What is Asthma Self-Management?

Self-management involves those aspects of taking care of asthma that are affected by a person's own actions and attitudes. In addition to a number of skills, this also involves interpersonal relationships in the family, in school, and in other social situations. Since personal dynamics play a key role in the management of a child's asthma, considerable time is devoted to these subjects in sessions 3 through 8 of the parents' program.

Self-management programs in no way conflict with the role of the doctor. The doctor remains in control of the medical management of the asthma, while self-management techniques merely strengthen the ability of the child to handle the day-to-day control of the condition. Self-management programs stress better communication with the doctor and better compliance with the medication regimen.

The basic skills of asthma self-management are taught in depth to children and reviewed for parents. These include being aware of asthma triggers and avoiding or lessening their effects, taking prescribed medication correctly and on time, recognizing the early signs of asthma, beginning preventive measures early in the chain of events that leads to an attack, and taking proper treatment steps during an asthma episode.

Self-management also requires an understanding of the nature of asthma and an understanding of asthma medicines and their side effects. Equipped with the correct information, a child or parent is better able to give explanations to others and to make decisions based on fact rather than on myth or fear.

The ultimate goal of the sessions is to enable the child with asthma to assume more responsibility for controlling his or her condition and to be less dependent on costly emergency services for abatement of asthma attacks. With time, the child will become more independent in all aspects of asthma management and will be less dependent on parents for reminders about things such as taking medicine and avoiding triggers. However, as both parents and children become knowledgeable about ways to control asthma at home, they will become better able to join forces and work at their own roles for controlling the condition.

CREDITS:

The original teaching manuals for the parents' and children's sessions of the Living with Asthma program were written by Thomas L. Creer, Ph.D.; Mary Backiel, M.A.; Susan Ullman, M.S., C.H.A.; and Patrick Leung, M.D.

Table of Contents

Leader's Guide for the Parents' Sessions Page

Delivering a Program for Parents 9
Implementing a Program 17
Development and Adaptations 20
Acknowledgements 22
Major Topics in the Living with Asthma Program for Parents 23
Bibliography 24

Session 1—Understanding the Nature of Asthma

Goals 27
Resources 27
Activity List 28
Teaching Notes 29
Leader Background Material 43
Visuals 59
Handouts 85

Session 2—Medication Management of Asthma

Goals 109
Resources 109
Activity List 110
Teaching Notes 111
Leader Background Material 123
Handouts 147

Session 3—Basic Concepts of Learning: Positive Reinforcement

Goals 165
Resources 165
Activity List 166
Teaching Notes 167
Leader Background Material 175
Handouts 185

Session 4—Behavioral Terms and Techniques Useful for Self-Management

Goals 187
Resources 187
Activity List 188
Teaching Notes 189
Leader Background Material 201
Handouts 217

Session 5—Antecedent Conditions

Goals 239
Resources 239

Activity List 240
Teaching Notes 241
Leader Background Material 251
Handouts 297

Session 6—Concurrent Conditions

Goals 321
Resources 321
Activity List 322
Teaching Notes 323
Leader Background Material 331
Handouts 363

Session 7—Possible Consequences of Asthma

Goals 385
Resources 385
Activity List 385
Teaching Notes 387
Leader Background Material 391
Handouts 403

Session 8—Problem Solving

Goals 405
Resources 405
Activity List 405
Teaching Notes 407
Leader Background Material 409
Handouts 413

8

Table of Contents

Delivering a Program for Parents 9
  Philosophy and Content 9
  Organization of the Teaching Manual 9
  Teaching the Parents' Sessions 10
  Fostering Positive Group Dynamics in the Parents' Session 12
  Special Materials 14
  Information on Asthma Drugs 15

Implementing a Program 17
  Setting 17
  Sponsoring Organizations 17
  Who Can Teach the Sessions? 17
  Recruitment of Participants 17
  Steps in Setting Up a Program 20

Development and Adaptations 20

Acknowledgements 22

Major Topics in the Living with Asthma Program for Parents 23

Bibliography 24

LEADER'S GUIDE FOR THE **PARENTS'** SESSIONS

DELIVERING A PROGRAM FOR PARENTS

Philosophy and Content

The Living with Asthma program for parents is based on the following premises:

1. A family can do much to lessen the effect asthma has on its members.
2. Having a basic core of information about asthma can aid greatly in its management.
3. An important part of asthma management is self-management.
4. Self-management can be learned.
5. By applying simple learning principles, especially those belonging to social learning theory, parents can help their children become better self-managers of their asthma.
6. Parents can benefit from contact with other parents of children with asthma. These parents can share experiences and concerns and can learn from each other.

This underlying philosophy is reflected in the organization of the parents' program into three areas:

1. Basic information about asthma, its management, and its medicines (sessions 1 and 2).
2. Techniques of social learning theory (sessions 3 and 4).
3. Practical and interpersonal aspects of asthma management (sessions 5, 6, 7, 8).

Organization of the Teaching Manual

Each session is organized into six parts: goals, resources, activity list, teaching notes, leader background material, and handouts. An orientation section appears at the beginning of the teaching notes.

The resource page lists the equipment and special materials needed for the session. It also identifies the leader background pieces and the handouts by title.

The major objectives of each session are summarized in the goal statements.

The activity list outlines the major teaching/learning events of the session and shows how the background pieces and the handouts relate to each activity.

The teaching notes provide detailed instructions for conducting the sessions. They serve two important functions: they highlight the main points to get across during the session and describe a series of alternative activities that can be used during each session.

The teaching notes are written in script format with instructions for the group and advice to the leader inserted at strategic intervals. Major topics and events are noted in headings in the left margin and in the body of the script. These headings track the content being presented and help the leader construct an outline for teaching, if desired.

The script format is merely a suggestion. It is just one way the concepts, leading questions, opening reviews, and closing reminders can be conveyed. It is offered as a crutch for the novice leader to get through parts of his/her first Living with

Asthma program. However, the leader should not feel bound to follow it verbatim. Instead, the leader should use his/her own words to convey information and stimulate discussion as much as possible. In a good program, the group leader will often go beyond the manual in devising leading questions, summarizing important points, and commenting on real life problems while reacting to the flow of interest in a parents' group.

Although the teaching outline is ordered into a specific sequence of topics, the questions and concerns of a group will not be so organized. The group leader must be prepared to address all of these concerns and to present the entire picture of self-management through comments and explanations. Often the leader will be required to stimulate discussion through creative questions that he/she develops on the spot.

In many sessions, a number of alternate activities are offered for getting across the main concepts of the session. Since there is not time to use them all, the leader must choose the ones that fit the attitudes and style of a particular group. For example in session 3, a purchased audiotape, a homemade audiotape, handouts, readings, and leader explanations are offered. The leader must review the content and approaches of each and see how the materials and activities can be adapted to a particular group.

Especially in the first and second sessions, a great deal of information is offered for presentation. A few groups may want all of this information, but most groups will be interested in only part of it. The whole picture is presented for the benefit of the leader, who can choose the pieces that meet the concerns of the group.

The leader background material is must reading. It includes basic information about the session topics and practical considerations for problems that can be offered during the sessions. The background material prepares the leader by increasing his/her knowledge base. The leader should be *thoroughly* familiar with it before conducting a session. There is no reason that this background material could not be distributed to participants, but the sheer volume of paper tends to lessen the effect of the program. It is better if the impact of the program comes from participants themselves as they interact with each other, exchanging information and support, and as they seek information by interacting with the leader.

The handouts section contains a master copy of all the materials that are designated to be given to participants during or after a session. Some of the handouts are essential. Others cover topics that may interest some of the participants. Use them as you and the group see fit. Although some suggestions are made in the teaching notes as to where handouts may be used in the session, the leader may use his/her judgement as to when and which handouts are given to the group.

Teaching the Sessions for Parents

A manageable group size numbers around 10, but sessions can be given with larger or smaller groups as well. Much will depend on whether or not both parents attend a particular session.

The atmosphere of the sessions should be fluid and informal. Parents should be encouraged to participate as much as possible. They should feel free to ask questions, express feelings, share experiences, make comments, and come up with new solutions to old problems. After all, the goal of the program is to help them integrate the techniques of asthma self-management into their daily lives.

A variety of teaching techniques are used in the parents' program for Living with Asthma:

1. Lecture, handouts, and questions and answers are the primary teaching tools in the first two sessions.
2. Reading, explanations, sample problem solving, flow charts, and audiotapes are the primary vehicles for the third and fourth sessions.
3. Discussion, idea sharing, and real life problem solving are the primary learning tools for the last four sessions.

Although the beginning sessions cast the leader in the role of a teacher, as the program progresses, the leader becomes more of a group discussion facilitator. Especially in the last four sessions, participants learn as much from each other as they do from the group leader. This arises from the fact that many parents have already worked out ways of handling problems related to asthma. However, not all parents have found satisfactory solutions to all problems, and parents benefit by exchanging information with each other. In a good program, the leader learns from participants as well.

At the beginning of each session, it is important to do a short review of the previous session. This helps reinforce major ideas and clear up misconceptions. It is also important, at the start of each session, to explain to parents what the children will be learning in their own group. Therefore, communication with the leader of the children's group and a cursory review of the children's materials are also necessary before each session.

In the original Living with Asthma program, a refreshment break was scheduled for a natural pause point near the middle of each session. Often the break period for the parents' group coincided with the break for the children. These periods fostered much more than just recreation and eating. They also greatly extended the interactive and observational processes of the Living with Asthma program. These breaks give a parent the opportunity to discuss privately with the group leader concerns that he or she may not have wished to air in a group setting. During simultaneous breaks for the two groups, children often run to their parents and talk to them. Leaders can then observe how parents interact with their children and gain clues to the positive or negative dynamics that are influencing the family. The leader can decide if actual behaviors confirm or deny impressions given by parents in their own group. During the break period, the two group leaders can also converse with each other, comparing notes on parents' and children's reactions to specific issues and discussing ways to resolve differences or tactfully handle any difficult intra-family situations.

The time for distribution of handouts will vary with the group. Very literate and motivated parents may wish to have handouts prior to each session so that they can read them and be ready for the next week's discussion. For non-readers or for adults to whom reading is not important, handouts may be distributed after a discussion to serve as an optional review and home reference.

In all parents' groups, a relaxed and supportive atmosphere should be fostered by the group leader. Parents should feel comfortable expressing themselves and encouraged to participate. This atmosphere is extremely important, because in order for the Living with Asthma experience to be effective, parents need to be able to bring up feelings or conflicts that have never surfaced before. A positive group climate is essential. This may be enhanced by active listening on the part of the group leader, diplomacy, and use of open-ended questions.

Fostering Positive Group Dynamics in the Parents' Sessions

Characteristics of a Good Group Leader

Asthma self-management groups have been led by people who have different personal styles of leadership but who were able to convey the information and messages successfully. However, good leaders share a number of common characteristics that affect their relationship with the group. A good leader:

1. actively listens to all participants
2. maintains eye contact with group participants
3. knows thoroughly the necessary background material for each session
4. asks for clarification where needed and admits lack of knowledge when appropriate
5. recognizes and integrates various ways of problem solving from all group members
6. actively seeks involvement of all participants in the discussion, but does not force anyone
7. knows when to exercise restraint and allows the group to come to its own realizations and understandings.

A good group leader also adds something to group development. It is not easy to define this something, but it includes two parts. First, the leader must add himself or herself, using personal experiences and serving as a model for the approaches that are being taught. Second, the leader must be able to see the group as an entity unto itself and always proceed with the interest of the group in mind. This involves paying attention to the group at all times and directing discussion back to the topic if necessary.

Hopefully, there will come a time when the leader realizes that the group has taken on an existence of its own. This might be called the "magic" of a group. When this "magic" has occurred, group members become supportive and understanding of their fellow participants, and they open up and talk comfortably about their concerns. They feel that they can laugh at themselves and recognize their own shortcomings and their need for improvement.

One term for the "magic" of the group is "group rapport." The guidelines given in these sections will help the leader to build this rapport. A leader of an asthma self-management group may wish to read these sections before teaching each session, if he or she feels a refresher is needed.

To foster group rapport in the parents' sessions, the leader should remember to do the following:

1. Point out the commonality of the group's experience. This will help the group form a cohesive feeling by linking together common experiences and situations. Comments such as these are useful:

Who else has experienced that?
What is your experience with that problem?
Have any of you also observed that?
How has anyone else dealt with a similar situation?

2. Remind the group that they all have already learned much about asthma management through their everyday experiences.

3. Trust your own experience. Share your experiences with asthma with the group or describe stories and solutions offered by members of other asthma self-management groups that you may have led. The group will be more willing to open up if you do so first. In your explanations, trust and describe what you know works,

but ask the group for help when it is needed. Encourage them to help each other as well.

4. Trust the group. Allow them to choose the direction of discussion as long as it is within range of the topic. You may need to channel the group in one direction if they are floundering, but do not force them in any particular direction. You may need to redefine the nature and purpose of the group if some parents seem to dominate to the detriment of other.

5. Give them and help them maintain the idea that it is their group. In order for them to have a positive experience, it is vital that they feel they can learn from each other.

6. Practice being a positive reinforcer yourself. Reinforce people for coming on time, asking good questions, following up on issues with their doctors, trying new ideas, and attempting to work out problems.

7. As participants assemble at the start of each session, try to greet each person who comes in. This helps the participants feel welcomed and accepted. Try to talk to each person, but do not engage in lengthy conversations with any one to the exclusion of others. Later in the group sessions, other group members will probably also start to greet their fellow participants and ask them how their week went. Congratulate yourself and the group when you see that the group has begun to take over.

Specific pointers for parents' asthma self-management groups

1. Stress and restress that the goal of the adults' group is to help parents encourage and allow their children to self-manage their asthma.
2. Stress that being a good health consumer is part of being a good self-manager.
3. Be prepared by having a supply of information and facts about the topics to be discussed in the session. Read the materials that accompany the session and anything else from other sources that relates to the planned topics.
4. Refer specific medical questions back to the doctor who is caring for the child. Next week, ask if the person checked or followed up on the question.

Leading Questions and Responses

The following questions and comments are helpful in guiding and stimulating group discussion. The leading phrases can be integrated into any of the sessions. The responses are helpful for maintaining a positive tone in the discussions. Use any that you feel are appropriate for your group.

Questions

How do you handle that problem?
Any questions or comments?
Has anyone else had that problem or a similar problem? How did you handle it?
What have been your experiences with that?
Has anyone else noticed that?
Does that sound familiar?
Is anyone surprised by that?
Who else has experienced that?
How have each of you dealt with that concern?

Responses

"I see what you are saying."—This is useful way of acknowledging someone's statement without agreeing or disagreeing with it.

"That's a good point."—This reinforces the person for making the statement. Use it and similar responses whenever possible.

Special Materials

A number of special resources are used in the parents' sessions that require advance preparation on the part of the program leader.

During the first session, the leader presents a great deal of factual material about asthma and lung physiology. To assist in this process, a series of masters for visuals is included in the leader background material. To convert these masters into appealing visuals, a number of strategies can be used. They can be taken to a printer or a quick copy shop and enlarged into posters. They can be taken to a graphic arts shop for conversion into slides, or they can be processed with a transparency maker to create 8 × 10½ transparencies for use with an overhead projector. Alternately, the masters may be duplicated and used in their original size as small posters that are passed out or tacked onto a portable bulletin board.

The second session features a guest physician or pharmacist to answer questions about asthma drugs. Although basic information is scripted into the teaching notes and offered in the leader background, the opportunity for participants to access a knowledgeable professional on the topic of asthma drugs is an important feature of the Living with Asthma program. Many questions on this topic cannot be easily answered by a lay leader. It is necessary to secure commitment of a physician or pharmacist well before the second session. In choosing an appropriate individual, it is advisable to consider persons with up-to-date knowledge who are supportive of the asthma self-management concept. In most cases, the guest professional need only be present for the last half of the session.

Sessions 3 and 4 introduce parents to the concepts of social learning theory and how these techniques can be applied to help children become better asthma managers and to normalize family life. Much of the information presented is based on the content of two books by Gerald Patterson: (1) *Families: Applications of Social Learning Theory to Family Life* and (2) *Living with Children: New Methods for Parents and Teachers.* Although the main points are summarized in the teaching manual, the ideas are explained in clearer detail in the two books. Therefore, it is strongly recommended that leaders read *both* books before giving the sessions. *Families* is written for the health professional. *Living with Children* is a simple, clear, self-teaching version for parents. The leader may find it appropriate to loan copies of *Living with Children* to participants before the third session. *Living with Children* gives good examples of real programs for behavior change and may help parents understand the techniques a bit better. In some cases, it may be appropriate to loan copies of *Families* as well. Both books must be obtained from Research Press in Champaign, Illinois. Complete ordering information is given in the resource section of session 3.

The parents' third session requires use of the audiotape titled *Positive Reinforcement.* It is the first of a series of teaching tapes called *Living with Children,* also by Gerald Patterson. The single tape may be purchased separately from the series and ordered from Research Press. Complete ordering information is found in the resources section of session 3.

As an additional resource for use in session 3 or session 4, Dr. Thomas Creer has written a script for a dialogue that takes place between a moderator and a group of parents. It covers the major behavior change techniques that are discussed in session 4 in a pleasant, personalized style. The script is meant to be recorded onto a tape that can be played in the session and used as the springboard for group discussion. Recording should be done prior to the session using volunteers or colleagues to read the parts of the parents and the moderator. The script is located in the leader background of session 4. It is formatted on the right side of the page with space at the left for the leader to jot down leading questions or comments about specific items to stress at strategic points.

Some of the leader background in session 4 is based on parts of the book *Children the Challenge* by Rudolph Dreikurs, M.D., and V. Stolz. Although not essential, it may be helpful for the leader to have access to this book. It is often found in public libraries. It has gone through several printings and is currently available from Hawthorne Dutton. Ordering information is included in the resource list of session 4.

Other materials used in the sessions require no special attention other than duplication in quantity for distribution to participants and prior reading by the group leader. However, if the leader chooses to use them other than as handouts, he/she must think of introductions, instructions, and interactive questions to use with the parent groups. Titles of handouts that may lend themselves to class activities include:

1. Common Questions about Asthma and Its Management
1. Common Questions about Asthma Medicines
3. Helpful Hints for Asthma Self-Management
4. Helpful Facts about Medications for Asthma
5. Asking Questions about Medications
6. Inhaled Bronchodilators
7. Don't Be Shy, Ask Questions
8. Attack Management Steps

For leaders who wish to consult other background material about asthma or who wish to refer their group members to sources of assistance and information, the Asthma Reading and Resource List is a very useful tool. It lists books, pamphlets, and films on asthma; journal articles about asthma self-management programs; and descriptions of organizations that provide information and services to persons with asthma. The Asthma Reading and Resource List can be obtained by writing to the National Heart, Lung, and Blood Institute, Asthma Project, Building 31, Room 4A-21, Bethesda, Maryland 20205.

Information about Asthma Drugs

Other resources for the second session are a series of references about asthma drugs.

The background material for the 1977 version of the Living with Asthma program contained a fair amount of information about asthma drugs, including side effects, timing of effect, and special considerations. Most of the basic information has been captured in the section on how asthma drugs work. However, updates were needed, and a special series of drug information sheets, developed in 1984 by the United States Pharmacopeial Convention (USPC), has been included in the current teaching manual. These cover six major groups of asthma drugs:

1. Adrenergic bronchodilators (oral/injection)
2. Adrenergic bronchodilators (inhalation)
3. Adrenocorticoids (oral)
4. Adrenocorticoids (inhalation)
5. Cromolyn (inhalation)
6. Xanthines Bronchodilators (oral)

These are must reading for the teacher and optional handouts for parents' groups.

The USPC updates the information annually to add any new facts relevant to patient use. Each title normally is available from the USPC as a 5½×8½ inch pad containing 50 tear-off sheets. The current price is $1.65 per pad, making the total cost of the asthma series $9.90. This is equivalent to a per-sheet cost of $0.031 or a per person handout cost of $0.19 when the six-sheet series is considered. However, for reference use by asthma self-management leaders the United State Pharmacopeial Convention has given permission to the National Heart, Lung, and Blood Institute to print the 1984 versions of the asthma drug series in the Living with Asthma program manual. These appear in the leader background for session 2 in both the parents' and the children's teaching manuals.

The drug information sheets describe the proper use of the medicines, precautions to take, side effects, and interactions with other drugs. They list the generic names for the drugs belonging to each group, but do not give brand names. A separate list of brand names has been compiled by the USPC and is included in the leader background for session 2. The sheets are especially useful for patients because they distinguish the side effects that require medical attention from those that do not.

The leader background in this teaching manual does not contain information about the timing of effects of asthma drugs. However, specific details on the time delay before various formulations take effect and duration of effects can be found in the reference *USP DI: Volume I. Drug Information for the Health Care Provider.* This 1411-page 1985 edition provides technical information about the pharmacology, brand names, indications for use, dosage forms, and timing of effects of over 600 types of drugs, including the drugs used for asthma. In addition, it gives more detailed information about drug interactions, side effects, precautions, and proper use than do the shorter drug information sheets. This compendium is continuously updated, and bimonthly updates present new information to supplement the annual edition. Cost for the 1985 subscription is $35.95.

If participants' children are taking medicines other than those for asthma, they may be interested in two other volumes that are written for patient use. The *USP DI: Volume II. Advice for the Patient* is organized by generic type and gives easily understandable information about the proper use of each medicine, precautions to take, side effects, and considerations for interactions with other drugs. It lists common brand names for each generic entry and is updated yearly. The 1000-page 1985 volume is $21.95. Over 500 monographs covering most drugs available in the United States are included.

If participants desire a home reference book, a shorter volume *About Your Medicines* covers 200 of the most commonly used types of drugs and is similar in format to *Advice for the Patient.* Written for the lay person, the 399-page 1984 edition of *About Your Medicines* is $5.95.

All of these reference materials may be ordered directly from:

Order Processing Department

The United States Pharmacopeial Convention
12601 Twinbrook Parkway
Rockville, Maryland 20852   Phone: (301) 881-0666

Setting

The original Living with Asthma programs were held in meeting rooms at the National Asthma Center. However, the program could be given in community facilities such as schools, churches, health centers, or hospitals.

The room requirements for conducting a program are simple. An arrangement to facilitate group discussion, enough space and chairs for everyone to sit comfortably, a place to display visuals, and a table for sessions with writing activities are all that are needed. It is important, however, to avoid a formal style in which the leader stands up front and the audience awaits "the word." A circular arrangement of chairs is often best.

Sponsoring Organizations

Any number of organizations may appropriately sponsor a Living with Asthma program for adults and children. Hospitals, community health centers, local chapters of the American Lung Association, health maintenance organizations, group practices, allergy or pediatric clinics, schools, and state or local health departments are likely sponsors. However, local medical societies, employee medical departments, or health insurers may also wish to sponsor programs.

Who Can Teach the Sessions?

The pilot version of Living with Asthma was taught by health educators and psychologists. However, the parents' sessions could be taught by other persons, including parents who have attended a previous Living with Asthma program, nurses who deal with families of children with asthma, school nurses, school health educators, respiratory therapists, physicians' assistants, nurse practitioners, or other health professionals.

A thorough knowledge of asthma and self-management principles, a sensitivity to the problems of families of children with asthma, and an ability to facilitate group discussion are some of the qualities required of a successful teacher of a Living with Asthma program. Prior experience with small group processes is helpful. However, a potential leader may prepare himself/herself by reading books about group dynamics and discussion facilitation techniques. The guidelines on fostering positive group dynamics in this user's guide are helpful too.

Recruitment of Participants

A number of techniques can be used to recruit parents and children to participate in the Living with Asthma program.

In the original program, recruitment had a two-part focus: (1) efforts to inform physicians and health organizations about the program in order to gain referrals, and (2) identification of persons who might benefit from the program with subsequent direct contact with the families as potential enrollees.

Outreach to physicians and health organizations was accomplished through personal letters to physicians in a five-state area, talks before local medical groups and societies, contacts with community health centers, contacts with health maintenance organizations, contacts with the staff of local hospitals, and contacts with local physicians. It was found that the physicians involved with the community health centers, HMO's, and hospitals were the key persons who were likely to refer patients into the program. Although staff at these organizations were supportive of the asthma self-management classes, they often were not in a position to directly advise or refer patients. Interestingly, participants from the health centers and HMO's were among the most enthusiastic of the class enrollees. Although talks before medical societies were helpful for generating interest and support for the program, they did not yield a substantial number of referrals. Personal contacts with local physicians were often more effective in generating referrals for the course. These doctors often were avid supporters of the asthma self-management project and were willing to spend time explaining it to patients who potentially might join the course.

Direct contact with potential participants was accomplished in a variety of ways. Outpatients being treated at the National Asthma Center often were referred or contacted, and a sizeable portion of these asthma patients did join the course. A second, very effective method was use of written handouts that were placed in waiting rooms of cooperating physicians. These descriptive materials reached a sizeable number of patients and helped reduce the amount of physician time spent on explaining the program. Ideally, such handouts could be placed in hospital emergency rooms and other medical waiting areas. A third method involved personal letters to potential participants; these elicited initial interest among children and their parents. The fourth method, telephone contacts, proved to be the most effective for identifying and recruiting participants.

For organizations that wish to sponsor Living with Asthma programs, similar recruitment techniques might be used. Referrals might also be obtained from school nurses or emergency room medical staff.

In addition to informing and working through the medical community, a community health agency might consider other techniques for participant recruitment. Announcements in local newspapers are effective for letting people know about upcoming asthma self-management sessions. These announcements can be placed by contacting the appropriate editors of your town's newspaper and by furnishing the necessary basic information in written form. A sample press release is provided. Check with the lifestyle, health, or local news editor for details about leadtime needed before an announcement is printed.

Announcements might also be placed in PTA newsletters, church bulletins, school newspapers, community centers, or on YM/YWCA and health center bulletin boards. Announcements placed in the employee newsletters of local businesses and corporations can also be effective for recruiting participants for a pediatric asthma self-management program. A letter written to the editor of each newsletter explaining the purpose of the program and giving the time and dates of the sessions can help get the announcement placed. Local radio stations might also run an announcement if you contact the public service director of the station and provide written information.

If a Living with Asthma program is offered within a medical facility such as a group practice, a hospital, a community health center, or an HMO, elaborate recruitment efforts may not be necessary. The staff merely has to identify potential enrollees by review of the medical records and invite patients and their families to participate. However, even in this case, prepared announcements or descriptive flyers may also be helpful.

Contact:

Name ______________________________

Address ______________________________

Phone Number ______________________________

Asthma Self-Management Groups

What:	Education groups for children with asthma and their parents designed to help children with asthma to better manage their condition
For whom:	Anyone interested in learning about asthma self-management
Given by:	Your name and brief background or name of your sponsoring organization
When:	Time and date of first meeting and how long the group will continue
Where:	Address and room for the class
Cost:	None or a nominal fee to cover handout reproduction costs
Other Information:	Need for preregistration or age range of children for the class Phone number of the contact person or agency

Figure 1. Sample News Fact Sheet

Steps in Setting Up a Living with Asthma Program

After commitment from a sponsoring organization has been obtained, certain simple logistics are involved in setting up an asthma self-management program:

1. Designate a contact person for the group.
   The leader may be the contact person or a staff member of the sponsoring organization may serve in that capacity. The contact person should be available to receive phone calls and to provide information about the meeting times and dates for the group.
2. Secure a meeting room for all the sessions.
3. Recruit participants.
   For ideas, see the section on recruitment in the Leader's Guide.
4. Order information resources.
   This includes the three books on social learning theory, the audiotape on positive reinforcement, and the optional reference books on drugs.
5. Obtain necessary equipment.
   The first parents' session may require a slide or an overhead projector. Name tags and pencils are also required for the first parents' session. A cassette tape recorder is needed for the third session.
6. Convert the masters in session 1 to appropriate visuals.
   Allow enough time for posters, slides, or overhead transparencies to be made if you choose to use any of these mediums.
7. Purchase folders or ask participants to bring folders to the first session.
   These will be used to hold the many handouts that participants will receive during the program.
8. Reproduce the handouts.
   Enough copies should be made so that at least one member from each family will get a copy to take home. If you plan to present a number of asthma self-management groups, it might be advisable to print large numbers or copies of each handout.
9. Read all the material in the program manual and the resource books.
10. Decide on approaches and leading questions for discussion.
11. Assemble all supplies.
    Check each session for specifics.
12. Reread the sections on conducting small group discussions with adults.

DEVELOPMENT AND ADAPTATIONS

The Living with Asthma program was developed during the years 1977–1980 at the institution then known as the National Asthma Center. It was tested with 343 children and their families from Colorado and surrounding states.

It was funded by the National Heart, Lung, and Blood Institute as part of a demonstration and education project to develop and evaluate programs for the self-management of childhood asthma. It was one of three research contracts awarded by the Division of Lung Diseases of the National Heart, Lung, and Blood Institute to develop such programs.

As offered by the National Asthma Center, the program was simply known as Program for Self-Management of Asthma. However, with its completion and national publication, it has been renamed Living with Asthma.

Early in 1983 a decision was made to publish all the program materials from the three NHLBI asthma self-management contracts. Because the resulting printed products are U.S. government publications, certain modifications have been made in the original materials of the Living with Asthma program to accommodate the constraints of the Federal system and to simplify the adoption of the programs by health educators across the United States.

The original parents' sessions included a video tape that covered basic information about asthma and asthma medications. It was shown as part of parents' sessions 1 and 2. It was not feasible to include the tape in the Living with Asthma course because there is no mechanism within the Federal government system to distribute both printed and audiovisual materials in the same package. Since the program is largely a printed item, the video feature was eliminated. Also, since video equipment is expensive to rent and not universally available in many community facilities, the use of the course would be severely limited.

The original video tape featured four characters: a newly diagnosed asthma patient named John, his mother, his doctor, and the nurse practitioner who assisted with patient education. The script was written by Susan Ullman and Mary Backiel, two of the research associates who led the original parents' and children's sessions. The boy and his mother were played by participants from one of the early asthma self-management classes. The doctor was played by Mary Backiel and the nurse practitioner was played by another staff member.

The scene was the doctor's office, and the tape followed a somewhat static format, covering common questions and conversations that John and his mother had with the doctor and the nurse practitioner.

The essential information from the tape has been converted into two lecture scripts, one for session 1 and one for session 2; a set of visuals; several new class activities; and two leader background sheets titled "Common Questions about Asthma and Asthma Management" and "Common Questions about Asthma Medicines." In many respects the original tape has been greatly expanded. The new lecture scripts and visuals contain more information about the topics covered than was found in the original tape. The class activities convey in depth certain concepts that were only mentioned in the tape and create awareness of additional features of asthma or asthma medication patterns that were covered only briefly in the video. The question and answer sheets cover certain areas from the tape that did not lend themselves to a lecture format.

The lecture script, the new visuals, and the new class activities were written by a program specialist who holds a doctoral degree in lung physiology and a master's degree in public health and has had experience teaching preventive health classes for pulmonary disease patients. The question and answer sheets were written by an experienced science writer.

Other new additions to the Living with Asthma parents' program include a series of asthma drug information sheets and a list of asthma drug names. These new materials are described in detail in the section of the User's Guide titled "Information about Asthma Drugs." Also new is an expanded lecture script for session 2. It incorporates information from the original course plus additional basic information of interest to consumers.

Another feature written after the conclusion of the program was the script for the do-it-yourself audiotape in session 4. It is described in the special materials section.

ACKNOWLEDGEMENTS

The Living with Asthma program was created as a result of a research contract to develop and evaluate programs for teaching asthma self-management skills to children. It was developed at the National Asthma Center in Denver, Colorado. The research was funded by the Division of Lung Diseases of the National Heart, Lung, and Blood Institute under contract number NO1-HR-7-2972. The project officer was Sydney Parker, Ph.D.

The Living with Asthma program was the result of the research and dedication of a team of physicians, psychologists, and health educators. The principal investigator was Thomas L. Creer, Ph.D. The co-principal investigators were Patrick Leung, M.D., and Kenton Burns, Ph.D. Together, Mary Backiel, M.A.; Susan Ullman M.S., C.H.A.; and Thomas Creer, Ph.D.; and Patrick Leung, M.D. developed and refined the Living with Asthma program materials. Kenton Burns, Ph.D.; Callis Morrill, Ph.D.; Richard Marion, M.S.; and Donald Miklich, Ph.D.; Paul Taplin, Ph.D.; and Glenn Wasek, Ph.D. worked on the evaluation of the project.

In the original program, parents' sessions were conducted by Thomas Creer, Susan Ullman, and Richard Marion. Children's sessions were led by Mary Backiel and Paul Taplin. Adolescent groups were moderated by Richard Marion and Ken Burns.

Near the end of the contract period, the facilities of the National Asthma Center were sold to the National Jewish Hospital and the program was no longer offered on a regular basis. The guiding force behind the program and the project's principal investigator, Dr. Thomas L. Creer, is now Professor and chairman of the psychology department of Ohio University in Athens, Ohio.

The original teaching manuals were written by Mary Backiel, Thomas Creer, Susan Ullman, and Patrick Leung. However, in 1983–84, modifications were made to accommodate the program for national dissemination. The revisions and editing were guided by Christine Krutzsch of the Office of Prevention, Education, and Control of the National Heart, Lung, and Blood Institute, with primary assistance from Estelle Schwalb, Cynthia L. Adams, and Gregory Morosco, Ph.D. Asthma drug information sheets were developed and reprinted with permission from the United States Pharmacopeial Convention.

Copies of the Living with Asthma teaching manuals for parents and children may be obtained from Asthma Project; Information Office; National Heart, Lung, and Blood Institute; Building 31, Room 4A-21; Bethesda, Maryland 20205, phone (301) 496-4236.

MAJOR TOPICS IN THE LIVING WITH ASTHMA PROGRAM FOR PARENTS

Medical Information

Lung Physiology

- normal functioning of the lung
- how lung function is impaired and altered during an asthma attack

Medical Treatment

Medications

- explanation of the major categories of asthma drugs
- use of nebulized medications
- preventative and pretreatment possibilities
- side effects of common asthma medications

Physician and Hospital Visits

- how parents may become good medical consumers
- how to have good physician-patient communication
- when to call or visit the physician
- allergy shots
- handling emergency attack treatment situations

Attack Management

- simple steps for attack management at home
- the importance of controlling attacks at an early stage

Asthma Self-Management Information

Principals for Learning Self-Management

- Positive reinforcement
- Consistency
- Natural consequences
- Asking for and getting behavior changes

Self-Management Practices

Routine asthma management

- Good health practices, including need for exercise
- Medication compliance
- Preventative procedures including early sign recognition
- Environmental controls and other ways of controlling triggers

Attack management

- Treatment steps for child
- Steps for parents and others

Concerns and problem solving around possible consequences of asthma

- Physical effects on child
- Emotional effects on child
- Physical and emotional effects on other family members

BIBLIOGRAPHY

Publications

Taplin, P.S., and Creer, T.L. A procedure for using peak expiratory flow rate data to increase the predictability of asthma episodes. *The Journal of Asthma Research,* 1978, *16,* 15–19.

Creer, T.L., and Burns, K.L. Self-management training for children with bronchial asthma. *Psychotherapy and Psychosomatics,* 1979, 32, 270–278.

Reprinted in H. Freyberger (Ed.), *Strategies in Psychosomatic Practice and Research.* New York: Karger, 1979.

Translated and published, *Allergy in Practice* (Japanese).

Creer, T.L. Self-management behavioral strategies for asthmatics. *Behavioral Medicine,* 1980, *7,* 14–24.

Creer, T.L. Psychosocial interventions. *Journal of Respiratory Medicine,* 1980.

Creer, T.L. Psychologic aspects of chronic lung disease. *Mediguide to Pulmonary Medicine,* 1981, *2,* 1–4.

Translated and reprinted, *Nursing Techniques,* 1983, *29,* 138–142 (Japanese).

Creek, T.L., and Leung, P. The development and evaluation of a self-management system for asthma. *Manuscripts of conference on self-management, Volume II.* Bethesda, MD: National Institute of Allergy and Infectious Diseases, 1981.

Creer, T.L., Renne, C.M., and Chai, H. The application of behavioral techniques to childhood asthma. In D.C. Russo and J.W. Varni (Eds.), *Behavioral Pediatrics: Research and Practice.* New York: Plenum, 1982.

Creer, T.L. Asthma. *Journal of Consulting and Clinical Psychology,* 1982, *50,* 912–921.

Creer, T.L., Ipacs, J., and Creer, P.P. Changing behavioral and social variables at a residential treatment facility for childhood asthma. *Journal of Asthma,* 1983, *20,* 11–15.

Creer, T.L., Marion, R., and Creer, P.P. The Asthma Problem Behavior Checklist: Parental perceptions of the behavior of asthmatic children. *Journal of Asthma,* 1983, *20,* 97–104.

Marion, R.J., Creer, T.L., and Burns, K.L. Training asthmatic children to use a nebulizer correctly. *Journal of Asthma,* 1983, *20,* 183–188.

Creer, T.L., and Kotses, H. Asthma: Psychologic aspects and management. In E. Middleton, C. Reed, and E. Ellis (Eds.), *Allergy: Principles and Practice. Second edition.* St. Louis: C.V. Mosby Co., 1983.

Creer, T.L., Respiratory diseases. In T.G. Burish and L.A. Bradley (Eds.), *Coping with Chronic Diseases: Research and Applications.* New York: Academic Press, 1983.

Renne, C.M., and Creer, T.L. Asthmatic children and their families. *Advances in Developmental and Behavioral Pediatrics.* Greenwich, Conn.: Jai Press, in press.

Marion, R.J., Creer, T.L., and Reynolds, R.V. Economic costs of childhood asthma. *Annals of Allergy*, in press.

Creer, T.L., Harm, D., and Marion, R.J. Asthma. In D.K. Routh (Ed.), *Handbook of Pediatric Psychology*. New York: Guilford Press, in press.

Creer, T.L. Asthma and the role of self-management. In W. Linden (Ed.), *Biological Barriers in Behavioral Medicine*. New York: S. Karger, in preparation.

Creer, T.L., Marion, R.J., and Harm, D. Asthma and children. In V.B. VanHasselt, P.S. Strain, and M. Herson (Eds.), *Handbook of Developmental and Physical Disabilities*. New York: Pergamon Press, in preparation.

Creer, T.L., and Winder, J. The self-management of asthma. In K. Holroyd and T.L. Creer (Eds.), *Self-Management in Health Psychology and Behavioral Medicine*. New York: Academic Press, in press.

Harm, D.L., Kotses, H., and Creer, T.L. Improving the ability of peak expiratory flow rates to predict asthma. Submitted for publication, 1984.

Creer, T.L. Self-management psychology and treatment of childhood asthma. *Journal of Allergy and Clinical Immunology*, 1983, *72*, 607–610.

Creer, T.L., Renne, C.M., and Christian, W.P. Behavioral Contributions to Rehabilitation and Childhood Asthma. *Rehabilitation Literature*, 1976, *37*, 226–232, 247.

Creer, T.L. Psychological Aspects of Asthma. *Respiratory Therapy*, May/June, 1977.

Books

Creer, T.L. *Asthma Therapy: A Behavioral Health Care System for Respiratory Disorders*. New York: Springer Publishing Company, 1979.

Creer, T.L., Backiel, M., Burns, K.L., Leung, P., Marion, R.J., Miklich, D.R., Taplin, P.S., and Ullman, S. *The Self-Management of a Chronic Physical Disorder: Asthma*. Submitted for publication, 1984.

Creer, T.L., and Christian, W.P. *Chronically Ill and Handicapped Children: Their Management and Rehabilitation*. Champaign, Illinois: Research Press, 1976, out of print.

Audiotapes

Creer, T.L. Psychological aspects of asthma. Current Views in Allergy and Immunology. 1980, *4*, Program 2.

Creer, T.L. Questions to the expert. Current Views in Allergy and Immunology. 1980, *4*, Program 4.

Creer, T.L. Asthma self-management. *Asthma 1980's*, 1981. Available through Allergy and Asthma Consultants, 5300 Harroun Road, Suite 101, Sylvania, Ohio 43560.

Creer, T.L. What asthma self-management is about. *Asthma 1980's*, 1982. Available through Allergy and Asthma Consultants, 5300 Harroun Road, Suite 101, Sylvania, Ohio 43560.

Creer, T.L., and Marion, R.J. *Self-management of asthma*. Three tapes from the Fourth Annual Scientific Sessions of the Society for Behavioral Medicine in Baltimore, March 2–5, 1983. Society for Behavioral Medicine, P.O. Box 8530, University Station, Knoxville, Tennessee 37996.

PARENTS' SESSION **ONE**

UNDERSTANDING THE NATURE OF ASTHMA

GOALS

- To explain the nature of asthma.
- To outline self-management concepts.
- To introduce members of the group to each other and to the participatory nature of the sessions.

RESOURCES

Leader Background Material:
- Common Questions about Asthma and Asthma Management
- Vocabulary for Asthma Self-Management Groups
- Helpful Hints for Asthma Self-Management
- Attack Management
- Answer Keys for Adult Attitude Survey and Asthma Information Quiz

Visuals:
- Masters of diagrams to accompany lecture
- Copies of masters made into large posters, slides, or overhead transparencies
- Summary of Asthma Self-Management Concepts

Equipment:
- Blackboard and chalk, or a flipchart and marking pens
- Name tags and pencils or marking pens
- Folders to hold handouts (optional)
- Paper and pencils for participants (to write questions about asthma)
- If using slides, a slide projector and screen
- If using overhead transparencies, an overhead projector and screen
- If using posters, an easel, the chalk tray of a blackboard, or push pins and a bulletin board or cork board

Handouts:
- Common Questions about Asthma and Asthma Management
- Vocabulary for Asthma Self-Management Groups
- Helpful Hints for Asthma Self-Management
- Attack Management
- Summary of Attack Management and Control
- Asthma Attitude Survey
- Asthma Information Quiz

Supplies:
- Coffee, tea, goodies
- (Refreshments are a nice touch for all the sessions, although they are only listed for the first one.)

ACTIVITY LIST

Topic/Activity	**Leader Background**	**Handouts**
Welcome		
Nature of the Parents' Group		
Optional Preprogram Survey		Asthma Attitude Survey Asthma Information Quiz
The Respiratory System	Masters for Visuals	
Breathing Awareness Exercise: Straw Breathing		Straws
What Happens during an Asthma Attack	Master for a Visual	
Information to Counter the Myths of Asthma	Common Questions about Asthma and Asthma Management	Common Questions about Asthma and Asthma Management
Basic Definitions and Concepts in Asthma Self-Management		Helpful Hints for Asthma Management Common Questions about Asthma and Asthma Management
Future Topics of Children's Session		
Discussion of Basic Asthma Information		Common Questions about Asthma and Asthma Management Vocabulary Helpful Hints for Asthma Management
Optional Activities with Handouts		Common Questions about Asthma and Asthma Management Vocabulary Attack Management Helpful Hints for Asthma Management Summary of Self-Management
Breathing Exercise: Pursed Lip Breathing		
Reminder		

PARENTS' SESSION **ONE**

UNDERSTANDING THE NATURE OF ASTHMA—TEACHING NOTES

Orientation for the Leader

This first session lays the groundwork for later sessions by giving parents a wealth of basic information about asthma. In addition to the workings of the respiratory system and the nature of asthma, this includes facts to counter the common myths of asthma and an overview of asthma self-management techniques. Much of the information is scripted directly into the teaching notes as a lecture, but the leader can present the same facts in other ways as well. The remaining information is contained in the handouts such as the one titled Common Questions about Asthma and Asthma Management. This more colloquial information may be presented to parents through a discussion mechanism, with the leader asking questions of the group and correcting any misinformation participants may already have.

A number of additional handouts offer practical hints on asthma management. These may be distributed at the end of the session or used within the session as the basis for discussion. The approach will depend on the interests and style of the group.

The lecture material about the respiratory system is rather detailed, and the leader may choose to omit parts if the group is not interested. However, the entire picture is presented for the leader's benefit.

The important thing is to get across basic facts about asthma. These include:

1. The nature of the respiratory system
2. What happens during an asthma attack
3. Information to counteract the common myths of asthma:
   - Asthma is *not* all in the head.
   - Asthma has a physical cause or basis.
   - Most attacks are brought on by triggers; they do not just happen.
   - Emotions may trigger an attack but they do not cause the asthma (the physical sensitivity) in the first place.
   - Most attacks are preceded by early signs; they usually do not occur without warning.
   - Sometimes asthma is outgrown; sometimes it is not.
   - Asthma can be controlled but not cured.
   - The development of asthma is *not* related to the way parents raise their children.
4. Basic concepts of attack management and prevention (self-management):
   - Identifying and avoiding triggers
   - Recognizing early signs of an asthma attack
   - The importance of acting on early signs
   - Attack management steps:
     1. Rest and relax.
     2. Drink warm liquids.
     3. Take medicines as prescribed.

It is also important to stress the participatory nature of the sessions and to explain the premises of the parents' groups.

In session 1, the leader has the option of giving participants a preprogram questionnaire that measures knowledge and attitudes about asthma management. The use of such quizzes early in the program may create a test anxiety among participants. If you feel this may be a problem, then these survey instruments may be omitted. However, if you wish to evaluate the Living with Asthma program, a pre- and postprogram survey is useful. The knowledge quiz and attitude survey are helpful, however, in getting participants to start thinking about what asthma self-management is and in focusing their attention on the type of information that will be presented later in the session. Some of the items on the attitude survey are also good discussion starters. The leader may use them to spark discussion at any point in the program.

To accompany the lecture about the respiratory system and the nature of asthma, masters for visuals are provided in the leader background. An optional master for a visual summarizing the key steps of asthma self-management is also provided.

Welcome

Hello Mr./Mrs. ____________________. How are you this evening? It's nice to see you today. Please fill out and wear a name tag so everyone can get to know you more easily.

As people arrive, greet each person as an individual. Wait until all participants have assembled before starting the group.

Now that everyone has arrived, why don't you take seats in the circle of chairs that has been arranged for us.

Welcome to our asthma self-management group. My name is ____________________

and I'll be your moderator for the next eight weeks. With the ____________________

(organization) I've been involved with families with asthma through ______________

Give your experiences with asthma groups or explain your interest in asthma if this is your first time.

Nature of the Parents' Group

sessions of the participatory nature

We'll be talking about asthma and how you can help your child learn to take more responsibility for managing it better. Throughout the sessions you are encouraged to make comments and ask questions, and we'll be sharing experiences and insights.

Since this interchange and discussion will be an important part of our sessions, why don't we introduce ourselves. Starting with you, ____________________, on my right, let's go around the room and have each person state their name and something about their child with asthma.

This exercise should help people get to know one another and make them feel a part of the group.

premises of the parents' group

Now that we know one another better, I'd like to tell you a bit about the philosophy of the Living with Asthma program and what we will be covering in the next eight sessions.

The parents' program is based on the following premises:

1. Knowing basic information about asthma can greatly aid in its management. This core of information includes:
   - what asthma is and what it is not
   - steps for managing an asthma attack at home
   - ways of preventing attacks
   - how to use asthma medicines properly
2. An important part of asthma management is the increased responsibility that can be assumed by the child.

   The Living with Asthma program is designed to teach children basic skills for asthma self-management and to teach parents how to help their children become more independent in practicing these skills.
3. There are many things a family can do to lessen the negative effects of asthma on the child and the family. Some of these things include:
   - having a plan for managing an attack at home
   - working on changing family behaviors that create stress during an attack
   - finding creative ways to solve problems related to asthma so the family can have a more normal life
   - helping the child deal with asthma-related problems in school, recreation, or social situations
4. Many of these things involve adopting new patterns of behaviors and new ways of looking at things. These *self*-management behaviors can be learned with the help of everyday learning principles and application of social learning theory.
5. Parents can learn and benefit from contact with other parents who share experiences and concerns about asthma. This group experience can involve:
   - airing of feelings
   - discussing common problems
   - finding solutions
   - helping each other to look objectively at and to improve situations related to asthma

Optional Preprogram Survey

Distribute the two survey forms to each participant.

Asthma Attitude Survey and Asthma Information Quiz

The Asthma Attitude Survey and Asthma Information Quiz are short survey items that have two purposes.

In the first place, on a personal level, they will help you zero in on your current feelings and knowledge about asthma. They will help you start thinking about the issues involved in asthma self-management and set the stage for some of the material that will be covered in the sessions. As you fill them out, please try to be honest and record your true opinions as of this moment.

In the second place, they will be used to help evaluate the impact of the Living with Asthma program. They will be given again at the end of the program to see if the session had any effect on teaching asthma self-management skills and viewpoints.

Please remember that this is not a test of you. It is merely a way of evaluating the program. The results will not be graded and you do not need to put your name on the sheet.

Allow time for participants to complete the forms and then collect both forms from everyone.

Transition to Basic Information Lecture

Now that we have started thinking about asthma self-management, let's review some basic facts about breathing and asthma.

First, however, take some time to write down any questions you may have about asthma. Here is some paper on which you can record your thoughts.

Distribute blank sheets of paper, one to each participant.

See if your questions are answered during the presentation of material that follows.

The leader may wish to entertain questions during the lecture if it seems appropriate and if it does not interrupt the flow of thought. However, the most appropriate time may be after the presentation during the designated discussion period.

Lecture—The Respiratory System

introduction

The vast majority of people with asthma have an inherent sensitivity in the lungs. We might say that they have very reactive or "twitchy" lungs. We will examine the reasons why and discuss what happens during an attack in a moment.

However, before we do, it is important that you become familiar with the parts of the respiratory system, how we breathe normally, and the importance of respiration.

Respiration

Breathing is a function that is taken for granted by most of us. It is part of the process of respiration which provides our bodies with a continuous supply of oxygen. Oxygen is often called the fuel of life because it releases energy from the food that we eat and enables cells to perform the many functions that keep us alive.

Oxygen enters our lungs with the air that we breathe. It then is absorbed into the bloodstream deep inside our lungs to be delivered to the billions of cells in the body.

As cells function, they produce the waste gas carbon dioxide (CO_2). Just as oxygen must be continuously taken in, carbon dioxide must be continuously removed.

Anatomy of the Respiratory System

Display visual 1 and point to the parts of the diagram as you describe the respiratory system.

anatomy

As you breathe in, air flows through the nose or mouth, down the throat (or pharynx), over the voice box (or larynx), continues down the windpipe (or trachea). The air then reaches the right and left bronchial tubes (or bronchi). These bronchial tubes are known as the "large airways." The bronchial tubes branch into smaller and smaller passage ways called the "small airways" or "bronchioles." The air continues into the bronchioles and finally reaches the air sacs (alveoli).

Display visual 2 as you explain role of alveoli.

gas exchange in the alveoli

These small air sacs have a sponge-like appearance and delicate structure. It is here in the air sacs that oxygen is picked up by the bloodstream and carbon dioxide is removed. The actual exchange takes place in the blood vessels that surround the air sacs.

It is important to note that the large and small airways do not participate in the exchange of oxygen and carbon dioxide. Instead the bronchial tubes and bronchioles merely serve as a pipeline or delivery system for carrying air from the outside environment to the air sacs.

Muscles of Breathing

▌ **Display visual 3 as you discuss the muscles of breathing.**

In order to bring or breathe air into our lungs, we rely on a series of muscles. The most important is the diaphragm. This is a large, dome-shaped muscle located between the chest cavity, which holds our lungs, and the abdominal cavity which holds our stomachs and other digestive organs.

In normal breathing when we breathe air in, the diaphragm moves down to allow our lungs to expand and to make more space for the air to come in. In contrast, when we breathe out, the diaphragm moves up to force air out of the lungs.

Other muscles involved in breathing are the chest wall muscles between the ribs that run horizontally around the front of the chest and the muscles in the neck. These muscles are used especially during an asthma attack, because the body is straining to force air in and out of the lungs. This may explain why your child may complain of chest soreness after an asthma attack.

Cleansing of Air: Role of Mucus and Mucus Removal

The air that we breathe is full of minute particles of dirt and other debris that must be removed before reaching the delicate air sacs. This filtering system begins with the nose, which cleans out some of the debris by entrapment in the hairs and mucus layer.

▌ **Display visual 4 as you describe the role of mucus.**

Farther down in the system, the walls of the throat and the airways are coated with a sticky fluid called mucus that traps and removes additional dirt and germs that were not caught in the earlier filters.

> Mucus is produced by mucous glands and by specialized cells called goblet cells. The mucous glands and goblet cells are found inside the layers of tissue that make up the airway walls. Goblet cells are very near the surface of the airway.

To prevent dirty mucus from clogging the airways, the throat and airways are lined with cilia, or broom-like structures that sweep mucus up and out toward the throat where it can be either spit out or swallowed.

> The millions of cilia in each square inch of the airways beat back and forth rhythmically about 16 times per second, in a constant motion that carries mucus upward. This upward movement of mucus in concert with the cilia is called the mucociliary escalator.

Air Is Moisturized: Normal Role of Mucus

If air is too dry, it can damage the delicate air sacs. Therefore, the air that is breathed into the lungs must be made very moist. This is accomplished by absorbing water from the mucus layer that lines the airways.

▌ **Display visual 5.**

This moisture that is put into the air in the lungs become evident when someone steps outside on a cold day and "sees their breath" as they breathe out.

The warm, moist air inside the lungs has "invisible" water vapor. However, when the water vapor hits the cold outside, it condenses into tiny droplets of water that look like steam.

The moisture in mucus is produced by glands, called serous glands.

These glands are located in the tissue that forms the airways.

For serous glands to do their job, they depend on an adequate supply of water. This comes into the body by drinking liquids, a practice that is very important for the child with asthma.

Air Is Warmed: Role of Airways

Another role of the airways is to warm or cool the air that comes in so that it is close to body temperature by the time it reaches the delicate air sacs. This is accomplished by air contacting the walls of the airways and either picking up heat or giving off heat to the blood vessels in the airways.

Airflow Is Controlled: Role of Muscles Surrounding the Airways

Display visual 6.

Within the outer walls of the airways are muscles that crisscross each other and wrap around the airway like bandages. These muscles are called smooth, or involuntary, muscles because we have *no* conscious control over their movement.

They are the same type of muscles, smooth muscles, that line the digestive tract and other organs and that operate automatically. We *cannot will* these kind of muscles to do anything.

The purpose of the muscles around the airways is not well understood.

However, when the muscles contract, or tighten, they squeeze the airways and cause the channel where the air flows to become much smaller. Therefore, air has a harder time getting in and out.

When these muscles relax, the channel where the air flows gets larger, and the air can get in and out more easily.

Breathing Awareness

Breathing is often taken for granted largely because it goes on without our being aware of it. Our bodies have a kind of "automatic" pilot that keeps breathing operating without our having to think about it. This control center, located in the lower brain, also governs heart rate, digestion, and other bodily functions directed by the "involuntary" nervous system.

The breathing control center in the lower brain signals the parts of the respiratory system to breathe fast, slow, or somewhere in between depending on the body's need for oxygen at any given moment. For example, when you are exercising, more oxygen is needed. On the other hand, when you are reading a book, your body's need for fuel is decreased.

The lower brain can sense the level of carbon dioxide in the blood (as an indirect measure of the need for oxygen) and sends signals to the lungs to speed up or slow down breathing as needed. If the level of CO_2 is high, as it would be if oxygen level is correspondingly low, the breathing rate increases.

Because the function of breathing is taken care of automatically, we are freed to use the higher centers of the brain to concentrate on personal growth and development.

However, when breathing is impaired, as when a person has asthma, we become very aware of the breathing process, and we may experience feelings ranging from discomfort to outright panic.

Breathing Awareness Exercise—Straw Breathing

Participants with asthma should refrain from doing the exercise.

I am going to pass out drinking straws so that we can do an exercise together. The straws are going to be the means through which oxygen will be delivered to our bodies and carbon dioxide (CO_2) removed.

▌Pass out straws. Demonstrate steps if necessary after they are given.

part 1 The steps are simple.

step 1 First, place the straw in your mouth and close your lips around it as if you were about to drink an ice cream soda.

step 2 Second, gently pinch your nostrils shut.

step 3 Next, suck in air through the straw to the count of 5. Ready, 1, 2, 3, 4, 5.

▌Count slowly aloud.

step 4 Now, hold your breath to the count of 3. 1, 2, 3.

▌Count slowly aloud.

step 5 Finally, let the stale air out to the count of 5. I'll count slowly, 1, 2, 3, 4, 5.

Let's repeat this two more times until we get the rhythm.

▌Repeat the directions two more times.

part 2 Now we are going to try it again, but we will do something different. This time, as you begin to breathe in through your straw, pinch the straw in the middle to make the air path more narrow, but do not close it off completely. You can use the hand that is holding the straw as your other hand will be occupied holding the nostrils shut.

Let's try that again. Be sure to keep constricting your straws as you breathe in and out.

▌Repeat the instructions for the modified version two more times.

responses How did you feel physically and what emotions did you experience during the exercise?

In the first part:

How did you feel when breathing in through the straw?
How did you feel when you were holding your breath?
How did you feel when you were breathing out?
What do you remember about the experience?

In the second part:

How did you feel after pinching the straw shut?

How did you feel when you went back to normal breathing without the straw?

Note: People commonly report that they hear the air rushing in and out. This increases their awareness of breathing. When the straw is pinched, people may say they feel anxious or scared. Many realize for the first time what their children go through when they have an asthma attack. When people resume normal breathing they often experience a feeling of relief and a greater appreciation for something they have formerly taken for granted.

Lecture: What Happens During an Asthma Attack

Now that we know what the normal respiratory system is like, and what is involved in normal breathing, let's look at how things change when a person has an asthma attack.

During an asthma attack, three major events take place in the airways. Together they all cause the path where the air flows to get smaller. Therefore, it is harder for air to get in and out of the lungs.

Display visual 7. Point to sections a, b, c, d and the structures that are affected as you explain the events of an attack.

asthma

First, the muscles that surround the airways tighten. This is called *bronchoconstriction.*

You can see that this tends to pinch the airways partway closed in figure a.

Second, the lining of the airways swells and pushes inward. This is called *edema.*

Since the walls of the airway get fatter, they take up more space and make less room for the air to get through. This is shown in figure b.

Third, the mucous glands work overtime and produce more *mucus* than is needed, causing a further blockage of the airways. In addition, the mucus may become thick and stringy and form *plugs* in the airways.

You can see a representation of this in figure c.

wheezing

The wheezing sound that is typical of asthma is caused by air forcing its way through the narrowed airways and vibrating the mucus.

On the diagrams you can see what happens inside the breathing tubes and how the space where the air flows become smaller.

Figure d shows how all three events together act to block the airways.

air trapping

During a serious asthma attack, the lungs become over-inflated. This happens because air becomes trapped in the air sacs behind the points of obstruction in the narrowed airways.

Display visual 8.

Even after breathing out as hard as possible, air remains trapped deep in the lungs. However, this air is stale and contains lots of carbon dioxide.

This CO_2-laden air sends signals to the brain that the body's supply of oxygen is not adequate. The breathing control center then directs the involuntary nervous system to speed up the rate of breathing to overcome this deficit of oxygen.

Thus the air trapping leads to increased breathing rates due to chemical signals in the body. This explains why a child breathes rapidly during an asthma attack.

Information to Counter the Myths of Asthma

Physical Cause of Asthma

Asthma occurs because of a physical sensitivity in the lungs. This may be thought of as "twitchy lungs" or "hypersensitive airways."

This lung responsiveness may be compared to what you may sometimes feel when you venture out on a cold day and take a deep breath of cold air. You may experience a slight tightness in the chest and perhaps some coughing that soon passes.

When the person with asthma has an attack, he/she often feels a severe tightness in the chest and has a coughing spell which may persist for minutes or even hours.

Asthma Is Reversible

Asthma is different from other chronic lung problems because the symptoms of asthma are reversible. This means that normal breathing can resume in most children with asthma until something triggers the next attack.

As you know, attacks occur sporadically and can vary in severity. Some are mild and some are much worse, depending on the degree and location of the airway blockage.

Outgrowing Asthma

Some children outgrow asthma. Others do not. It is difficult to predict for any one child. Children who have no outward signs of asthma as they get older may still have decreased lung function when it is measured by certain tests. Generally, a change for better or worse occurs about the time of puberty. However, the tendency to have asthma remains and asthma may possibly recur later in adulthood.

Controlled but Not Cured

Asthma can be controlled but not cured. Medicines help control the overresponsiveness of the airways by reducing the tendency toward swelling, relaxing the tubes, or helping to prevent a response to things that may trigger an attack. However, different children respond to different medicines in different ways, and the medicines have to be taken as prescribed in order to do their job effectively.

Also, if a person avoids situations known to bring on an attack or takes steps to manage an attack that has started, he or she actively works to control the asthma.

Basic Definitions and Concepts of Asthma Self-Management

Triggers of Asthma

If a person does not have asthma all the time, what is it that sets off an asthma attack? What stimulates the lung responsivenss in a person with asthma?

The things or events that set off, or trigger, an asthma attack are known as triggers. Common triggers include allergens, such as pollen, dust, mold, or animal dander; irritants such as smoke or odors; respiratory infections; emotional stress; or too much exercise.

Each person with asthma has his/her own triggers. Sometimes even laughing or crying too hard may be a trigger.

A person with asthma can do a lot to prevent attacks by avoiding known triggers or by minimizing exposure to triggers.

Early Signs of Asthma

Usually there is a slow progression of symptoms that occur before a full-blown asthma attack occurs. These early signs of asthma can take different forms in different people. For some it may be an itchy throat or a dry mouth. Others may feel overly tired or spacey or grumpy. Other early signs include coughing, a slight tightness in the chest, shortness of breath, or decreased exercise tolerance.

Early signs are symptoms that occur before audible wheezing or before an attack is fully in progress. These signs can serve as clues to start self-management steps that help to control the attack and to keep it from progressing to a serious stage.

Attack Management Steps

In this first session your children will be learning a number of skills to help them control asthma attacks. The attack management steps are:

1. Rest and relax.
2. Drink liquids, preferably warm liquids.
3. Take asthma medicines as prescribed.

For children this means stopping any activity and sitting down to rest or doing quiet things. Often deep breathing exercises or relaxation techniques can help a child to calm down and rest.

Liquids to drink include water or fruit juice or whatever is available and not too cold.

If the doctor has prescribed a medicine to take during an attack and if the child believes that attack has progressed to that stage, then medicines should be taken exactly as the doctor advised.

In addition, your children learn another step: 4. Tell an adult. This step is advised if children feel they need more help in controlling or dealing with an attack or if they need emergency treatment.

Using Medical Services Effectively

One part of asthma management that involves parents is the interaction with the medical system and medical services personnel. Parents are consumers of medical services and to use these services effectively, parents must:

1. Understand the nature of asthma.
2. Understand asthma medicines and their side effects.
3. Understand how to relate to medical personnel.

The last two topics will be covered in depth in later sessions.

Future Topics of Children's Sessions

In later sessions your children will spend more time learning about early signs and how to recognize them. They also will learn about triggers and come up with ways to avoid their triggers. Finally, children will discuss ways of handling emergency situations and talk about feelings about asthma.

All of these are important topics in the self-management of asthma from the child's point of view. Of special importance is acting on early signs and taking steps to control an attack in its early stages.

Discussion of Basic Asthma Information

transition

In our sessions, we too will look at all these topics in depth and we will share experiences, feelings, and ideas about handling various situations.

However, for now let's answer any questions you may have about the material in this first session.

basic information

Do you have questions about the physical causes of asthma or what happens during an attack?

What about the questions you wrote down before we began the lecture? Are any of them still unanswered?

Answer any that pertain to physiology of lungs or asthma or to basic information. If questions pertain to asthma medicines or other topics to be covered later, give a brief answer and ask person to hold it for that future session. If a question is very specific or requires a doctor's explanation, ask the participant to talk with the doctor or wait to the second session when a physician will be present.

common concerns

Now let's discuss some common questions about asthma.

The answers to many of these questions are found in the leader background and the handouts. Some, however, derive from the experience of the participants.

asthma all in the head

Is asthma "all in the head"? How many of you have ever heard this old myth? What would you say to someone who believes it?

Wait for responses, then give the answer.

Asthma is not in the head. It is in the lungs. People who have asthma have an inherent sensitivity in the lungs. When people with asthma are exposed to certain stimuli, the lungs react in a way that makes it hard to breathe. There are many types of stimuli that can provoke or "trigger" the asthmatic reaction in the lungs. Some of these triggers include allergens, irritants, certain foods, strong emotions, or too much exercise.

A person might deliberately expose himself/herself to a trigger, such as smoke or pollen. He/she might also deliberately or not deliberately get into a strong enough emotional state so as to precipitate an attack, or may exercise too hard and set off an attack. However, in the absence of triggers, a person with asthma cannot think himself/herself into an asthma attack.

emotions and asthma

Do emotions cause asthma? What do you think? What do your friends and acquaintances think?

Wait for responses. Encourage discussion. Then offer a summary answer if a satisfactory response does not occur.

Emotions do not cause asthma. The cause is the physical responsiveness in the lungs. Strong emotions may trigger an attack or make the job of controlling one a lot harder. However, they are not the underlying cause of the asthma itself and do not cause the person to develop the lung "twitchiness" in the first place.

outgrowing asthma

Can a child "outgrow" asthma?

Have you ever heard different terms or names for asthma attacks? Have you heard of "status asthmaticus"?

Allow a short time for response. Then explain definition of status asthmaticus and contrast it to meaning of asthma attack or asthma episode.

other questions

Had you heard that warm liquids were useful during attacks?

Have you found anything that helps your child or your family manage asthma?

What is the best advice that anyone has given you about asthma management?

What is the worst advice you have been given about asthma management?

Do you feel comfortable asking your doctor questions?

Is exercise a problem for any of your children? How do you handle it?

Do you remember the attack management steps? What are they?

Allow time for responses. Then repeat main steps: 1. Rest and relax; 2. Drink warm liquids; 3. Take medicine as prescribed.

Did you learn anything new from the lecture? Was it helpful?

handout

Distribute Common Questions about Asthma and Asthma Management.

This handout will help you remember the material we just discussed and will help you respond to people who still believe the old myths about asthma.

Optional Activities with Handouts

handout

1. Common Questions about Asthma and Asthma Management

Refer to the handout that was just distributed. Ask the group any of the questions that were not covered earlier in the session.

handout

2. Asthma Vocabulary Sheet

Review definitions of asthma attack, asthmatic, allergen, trigger, precipitant, early warning signs.

handout

3. Attack Management Sheet

This handout reviews the steps and considerations for managing an asthma attack. This is for your information only at this time. We will cover these steps in greater detail in session 6.

optional handout

4. Be Aware, Beware, Caution, and Danger Sheets

These lists summarize some of the main points in asthma management. Who wants to read the first one? Who wants to read the second? the third? the fourth?

Breathing Exercise: Pursed Lip Breathing

The exercise we are about to do is called pursed lip breathing. Its purpose is to assist in removing air that may be trapped in the lungs. It is thought that the resistance provided by the pursed lips helps to keep the airways open.

instructions

Everybody, stand up!

Breathe in through your nose with your mouth closed.

Now, breathe out through your mouth with pursed lips. By pursed lips, we mean to position your lips as if you are whistling or about to kiss someone.

Let's continue breathing in this fashion for about 1 minute. Try to make the effort of breathing out last twice as long as the time for breathing in. Let's try breathing in for 3 seconds: 1, 2, 3. Now, breathe out for 6 seconds; I'll count slowly 1, 2, 3, 4, 5, 6.

▌Consult a stop watch or a sweep second hand to get the timing.

Let's do that again four more times.

Breathe in 1, 2, 3. Now breathe out through the resistance made by your lips: 1, 2, 3, 4, 5, 6.

▌Repeat instructions three more times.

OK, stop. Go back to breathing normally.

▌Distribute handouts.

These will help you remember some of the things we talked about and will give some helpful information about asthma management.

Reminder

conclusion

Your children are being given a homework assignment about their asthma medicines. They must record the name of each prescribed medicine, the time it must be taken, and the dose. This will prepare them for a discussion of asthma medicines next week. You may wish to help them record the information on their homework sheet. Please remind your child to bring the completed sheet to class next time.

It would be helpful if you had the same information with you when you come to the parent's group next week. In our second meeting we too will cover basic information about asthma medications. We will learn how these medicines work and then have a chance to ask our guest physician Dr. ______________________ from ______________________ questions about asthma medicines. Thanks so much for coming. See you next week.

COMMON QUESTIONS ABOUT ASTHMA AND ASTHMA MANAGEMENT

What Is an "Asthma Attack" or an "Asthma Episode"?

These are general terms that encompass all types of asthma symptoms and all types of asthma attacks. They cover situations ranging from slight difficulties in breathing and wheezing to acute attacks to status asthmaticus.

For the child with asthma, any difficulty in breathing might be called an asthma attack or an asthma episode.

What Does the Term "Acute Attack" Mean?

An acute attack is any series of asthma symptoms that is severe enough to cause a person to stop what he/she is doing.

What Is "Status Asthmaticus"?

Status asthmaticus refers to an asthma attack that is getting progressively worse and that does not respond to asthma medicines normally used during an attack. This situation requires emergency treatment in a hospital or a doctor's office.

How Can Status Asthmaticus Be Prevented?

Serious asthma attacks can be prevented by avoiding situations that trigger asthma and by taking self-management steps in the very early stages of an attack.

What Happens During an Asthma Attack?

An asthma attack occurs when there is a blockage in the breathing tubes. This blockage is caused by three things:

1. *Bronchoconstriction:* the muscles that surround the breathing tubes tighten and make the airway smaller.
2. *Edema or swelling:* the lining of the breathing tubes swells and expands inward, making the opening where the air flows even smaller.
3. *Mucus secretion:* the membranes that line the breathing passages secrete extra mucus that may become thick and stringy and form plugs that further block the air passages.

What Causes Asthma?

Asthma is caused by an inherent sensitivity or twitchiness in the airways (breathing tubes or bronchial tubes).

What Is an Asthma Trigger?

A trigger is something that sets off an asthma attack.

What Are Common Asthma Triggers?

Common asthma triggers are allergens, such as pollens, foods, dust, mold, feathers, or animal dander; irritants such as smoke or odors; respiratory infections; emotional stress; or too much exercise.

What Are Some Ways to Avoid Asthma Triggers?

1. If an allergen like dust or pollen is a trigger, have your child avoid that allergen.
2. If a certain food is a trigger, your child should not eat it.
3. If your child is allergic to dust and mold, clean the child's bedroom three times a week. The child can help you put toys away so that they will not collect dust.
4. If air pollution or weather changes bother your child, have him/her stay inside as much as possible when such outdoor conditions exist.
5. If respiratory infections trigger your child's asthma, he/she should avoid adults and children who have respiratory infections and take steps to stay healthy; this includes getting enough rest, eating properly, and drinking plenty of liquids. If your child does get a respiratory infection, see that your child is treated or takes care of it immediately.

Is It True that Asthma Is "All in the Head"?

No. This is *not* true at all. People who have asthma have an inherent sensitivity in the lungs. When these people are exposed to certain stimuli, the lungs react in a way that makes it hard to breathe. There are many types of stimuli that can provoke or "trigger" this asthmatic reaction in the lungs. Some of these triggers include allergens, irritants, certain foods, strong emotions, or too much exercise.

A person might deliberately expose himself/herself to a trigger, such as smoke or pollen. He/she might also either deliberately or not deliberately get into a strong enough emotional state so as to precipitate an attack, or may exercise too hard and set off an attack. However, in the absence of triggers, a person with asthma cannot think himself or herself into an asthma attack.

Do Emotions Cause Asthma?

Emotions do not cause asthma. The cause is the physical reactivity or sensitive state of the lungs. Strong emotions may trigger an attack or make the job of controlling an attack a lot harder. However, they are not the underlying cause of the asthma itself and do not cause the person to develop the "lung twitchiness" in the first place.

What Can a Person Do to Avoid or Prevent Asthma Attacks?

1. Avoid triggers known to set off his/her attacks.
2. Know personal limits for exercise and not exceed them.
3. Take prescribed medicines on time, in the correct manner, and with the correct dose.
4. Avoid respiratory infections.
5. Follow good health habits such as getting enough sleep, eating properly, resting when needed, exercising properly.

How Can a Person Handle/Manage an Asthma Attack?

At the first sign of an oncoming attack, a person should:

1. Stop and rest.
2. Drink some liquids.
3. Take asthma medicines as prescribed.

It is important to be aware of the early warning signs of an attack and to take steps for self-management as early as possible. This way, a really serious attack often can be prevented.

What Can Be Done to Facilitate These Self-Management Steps?

If the attack occurs at home, the child with asthma may find it helpful to do quiet things during the preattack resting period. Such things include reading, playing cards, sleeping, or whatever the child likes to do that can be done with minimal physical exertion. The parents should have any needed materials ready so children can easily find them.

When drinking liquids, the child should make sure the beverage is not too cold.

How Can a Child Handle an Attack that Comes on with Hard Exercise?

The same three self-management steps as above should be followed: (1) stop and rest, (2) drink some liquids, (3) take medicines as prescribed. These steps are the same for an attack caused by other precipitants.

However, if the child consistently performs the above steps and still experiences asthma during exercise, he/she should talk to the doctor about the situation. The doctor may be able to prescribe a medicine that can be taken just before exercise to help prevent attacks.

What Role Does Drinking Liquids Have in Asthma Management?

Drinking liquids has a twofold role in asthma self-management. First, it is important for the child with asthma to drink plenty of liquids every day, even when he/she is not having an asthma attack. Second, during an attack, drinking warm liquids is an important attack management step.

Why Is Drinking Liquids Important?

During an attack, the child with asthma often breathes harder and faster, and more water is evaporated from the mucous blanket in the airways. Also, during an attack, the mucus tends to get thick and stringy and to form plugs as it starts to dry out.

Drinking liquids during an attack helps to replace the water that is lost by evaporation. The liquid that is added back to the body helps to thin the consistency of the mucus and makes it easier for the mucociliary escalator to move mucus up and out. This action helps to prevent airway blockage by mucus. These same considerations also are important in the everyday management of asthma because drinking plenty of liquids keeps the mucus well moisturized.

Why Is Warm Water Recommended During an Asthma Attack?

Water enters the body through the esophagus, or eating tube, which lies just behind the windpipe. The warmth of the water radiates to the windpipe, or trachea, and helps to relax it.

Should a Child with Asthma Take Gym Class or Should the Parents Ask the Doctor to Excuse the Child from Gym?

Exercise is important for a child with asthma. He/she does need to exercise to stay healthy, just like any other child. It is advisable for a child with asthma to participate in gym class if he/she is feeling well. However, children with asthma should be careful not to get overtired when exercising. They should be aware of their own limits for exercise and not exceed them. If the child feels an attack coming on, he/she should be allowed to stop and rest and to follow the other self-management steps. It is important that gym teachers understand that "short burst" sports are well tolerated by children with asthma, while sustained exertion, such as running laps, is potentially dangerous.

When a Person Is Taking Asthma Medicines on Time Every Day and Is Generally Doing Things to Control the Condition, Is It Still Possible for an Attack to Occur All of a Sudden Without Any Early Warning Signs?

No and yes. Usually an attack does give warning, with a slow progression of symptoms that may begin days in advance. With awareness, the person may begin to take steps to ward off the impending attack. However, once in a while an acute attack may come on suddenly. Such a situation might occur if the person comes in contact with a substance to which he/she is highly allergic, is exposed to a large dose of allergen, experiences multiple triggers at one time, or is exposed to a severe weather change. Under normal circumstances, however, an attack should come on gradually with warning.

What Are Some of the Early Signs of an Asthma Attack?

Coughing, shortness of breath, tightness in the chest, pain in the chest, an itchy chin or throat, a funny feeling in the neck, or feeling really tired or grumpy are among the early warning signs of an attack.

Why May a Child's Chest Feel Sore After an Attack?

During an asthma attack, a child works hard to get air in and out of the lungs and uses auxiliary chest muscles to do so. After all that exertion, it is not surprising that the chest may feel sore.

Will a Child Outgrow Asthma?

It is hard to predict for any one child. Some children will outgrow asthma and others will not. Children who seem to have no outward signs of asthma as they get older may still have decreased lung function when it is measured by certain lung tests.

The tendency for asthma will always be there, and the child may or may not develop asthma again as an adult.

Usually, when a child has asthma, a change for better or worse appears around the time of puberty.

How Is Asthma Different from Emphysema or Other Chronic Lung Problems?

Unlike emphysema, which is an irreversible lung disease, asthma is reversible. This means that the symptoms and lung changes that occur during an attack go back to almost normal when the attack is over. An asthma attack does not last forever, and the person with asthma can breathe normally between attacks. In contrast, a person with emphysema does not regain normal breathing capacity once the disease has begun.

How Can You Find Out What Your Child Is Allergic To?

Doctors try to determine what causes allergic reactions by conducting an allergy history. This means the doctor asks the child with asthma and his/her parents what foods or substances they recall as having triggered an asthma attack or caused an allergic reaction such as a rash. As a second step, the doctor performs a skin test.

How Do Skin Tests Work?

A drop of allergenic extract is placed in a small scratch on the patient's arm or back. This usually does not hurt and does not leave a scar. An allergenic extract is a dilute dose of a substance like grass pollen, dust, or animal hair. If the person is allergic to the substance, a red bump will appear at the site of the extract in about 20 minutes. If a person is not allergic to the substance, no bump will form. A separate scratch and drop of liquid is administered for each substance tested.

After All the Allergy Skin Test Results Come Back, Will You Know All the Things that the Child Is Allergic To?

No. Tests only give a general indication. They do not give all the answers. For most people, skin tests give a better idea of what a person may be allergic to and what, therefore, may trigger an asthma attack. However, some people cannot identify all their allergic triggers by skin tests. They then have to do some observation and comparing on their own. Relating an asthma attack to an observed exposure to a possible precipitant can also help to identify allergens.

How Can Asthma Be Controlled if It Is Impossible to Pinpoint All the Triggers?

Asthma can be controlled by taking the prescribed asthma medicine regularly and on time and by careful self-management practices such as drinking plenty of liquids and stopping to rest if early warning signs are felt during exercise.

Again, What Are the Asthma Attack Management Steps?

1. Rest and relax.
2. Drink liquids.
3. Take asthma medicine, if it is prescribed for an attack, exactly as the doctor instructed.

Where Can You Find Useful Pamphlets and Information About Asthma that Family Members Can Read?

Consult the publications and organizations listed in the resource list published by the National Heart, Lung, and Blood Institute. To obtain a copy of the reading and resources list, write to: NHLBI, Asthma Project, Building 31, Room 4A21, Bethesda, Maryland 20205.

What Are Some Pointers for Asking Your Doctor Questions About Asthma?

When you schedule your child's appointment, tell the nurse or receptionist that you have some questions and would like to schedule time to discuss them. This way she can allow a little extra time for your appointment, and the doctor will be ready to answer your questions.

As questions come up between doctor's visits, write them down. Keep your questions list in an accessible place so you can find it and add to it easily. Bring the list with you when you talk to the doctor.

VOCABULARY FOR ASTHMA SELF-MANAGEMENT GROUPS

ALLERGEN: A substance to which one is allergic.

ANTECEDENT: Happening before.

ASTHMA ATTACK: Any worsening of breathing that requires an interruption of ongoing activities or requires some procedure to resume normal breathing patterns.

ASTHMA SELF-MANAGEMENT: Taking care of those aspects of the illness that can be affected by a person's own action. Specifically this includes: taking prescribed medications on time and correctly; being aware of the triggers of asthma and, when possible, avoiding them or lessening their effects; beginning preventive measures early in the chain of events that leads to an episode; and, taking the proper treatment steps during an episode. Some other aspects of self-management include: accepting the rights and responsibilities of a consumer of medical services; understanding asthma medications and their side effects; understanding the nature of asthma; and using a medical system efficiently.

ASTHMATIC: A term commonly used to describe a person with asthma. Avoid using this term to label a person who has asthma. According to child psychologist Rudolph Dreikurs, "When we label a child, we see him as we have labeled him. So does he. He identifies himself with his label. This reinforces his faulty self-concept and prevents his moving in a constructive direction."[1]

CHRONIC: Happening repeatedly.

CONCURRENT: Happening at the same time or along with.

CONSEQUENCE: Happening as the result of.

EARLY WARNING SIGNS: The earliest symptoms that breathing problems may be developing.

MEDICATION COMPLIANCE: Taking medications in exactly the way and at the exact time specified by the doctor.

NATURAL CONSEQUENCES: What would naturally occur as the result of an action if there were no intervention.

NEGATIVE REINFORCEMENT: The removal of an adversive stimulus or condition. By taking away the unpleasant situation or consequences, a behavior that was formerly performed infrequently will be increased.

POSITIVE REINFORCEMENT: The procedure of presenting a desired stimulus after a desired behavior or response has occurred. As used in this material, positive reinforcement means some form of expression of approval of a person's behavior.

PROGRAM (FOR BEHAVIOR CHANGE): A plan of action to bring about specific behavior change, including specifying the changes and rewards that will result.

PRECIPITANT: A substance or situation that causes a person to have an asthma attack.

PUNISHMENT: Application of something negative.

SOCIAL LEARNING THEORY: A collection of ideas that are concerned with how people teach people.

TRIGGER: Another word for precipitant.

---

[1] Dreikurs, R. with Soltz, V. *Children: the Challenge*, Hawthorn Books, Inc., 1964.

HELPFUL HINTS FOR ASTHMA SELF-MANAGEMENT

Understanding Asthma

In ASTHMA, the bronchial tubes are overreactive to "normal" environmental events.

During an ASTHMA ATTACK air gets trapped in the lungs so that, as the attack progresses, there is less and less room for fresh air to enter.

Many children with asthma have EXERCISE-INDUCED ASTHMA, that is, asthma brought on by hard exercise. Sometimes medication can prevent this type of asthma. Ask your child's doctor.

Dealing with Common Problems

If you are looking for good BABYSITTERS with whom you can leave your child with asthma, consider these suggestions:

- Form a babysitting co-op among families you trust or who also have children with asthma.
- Contact the medical school if there is one in your area. Often medical, nursing, or other health sciences students need a little extra money and would enjoy babysitting.

In case of an EMERGENCY when parents are out of town, it is a good idea to leave a signed and notarized release form with whoever is taking care of the children. This form authorizes the doctor or hospital to administer emergency care.

If a person with asthma comes into contact with an ALLERGEN such as grass or animals, having him/her bathe, shampoo, and change clothes may prevent an asthma attack or lessen its severity.

When the family goes on VACATION, take a letter from your child's doctor explaining current medications and medical care and what to do in case of a serious asthma attack.

When TRAVELING TO AN UNFAMILIAR AREA, find out where the nearest phone and hospital or emergency facilities are.

MOVING to another part of the country is usually not an effective treatment for asthma or allergies.

It might help your frustration level to know that asthma attacks are very common on such special occasions as BIRTHDAYS AND HOLIDAYS. If this is a problem in your child's case, time out to rest and calm down a little during exciting times will often cut down on the number of these attacks.

Cutting the Cost of Asthma

The LEAST EXPENSIVE kind of theophylline-base medication is Aminophylline USP.

Air conditioners and other equipment or supplies bought for asthma symptom relief can often be taken as a MEDICAL TAX DEDUCTION when computing income taxes.

SUPPLEMENTAL SECURITY INCOME can pay a substantial amount of money per month for chronic medical problems although rules for qualifying for it are very strict. If you would like to find out more, contact any Social Security office.

One goal of GOOD ASTHMA MANAGEMENT is to cut down the cost of asthma by intervening during the early stages of an attack in order to prevent it from worsening.

Managing an Asthma Attack

An asthma episode or attack will rarely come on without warning. This warning is referred to as an EARLY SIGN OF ASTHMA.

If attacks seem to be happening SUDDENLY AND WITHOUT WARNING, try to pinpoint with your child with asthma specific visual signs or sensations that might be occurring before the attack gets bad.

COUGHING is frequently an early sign of asthma.

An early warning sign of breathing problems can be increased PULSE RATE. Although these figures are very variable, at rest:

Normal pulse rate: 70–90 beats per minute
Early warning sign: 120–140 beats per minute

A quickened BREATHING RATE can sometimes be an early sign of asthma. To check the rate, look at the chest and count each rise/fall. The average breathing rate AT REST normally is 20 breaths per minute; 30 breaths per minute and faster AT REST can be a sign that breathing is becoming more difficult.

Being TIRED and GRUMPY is often an early sign of an asthma episode.

At the FIRST SIGN OF AN ASTHMA ATTACK:

1. Rest and relax (and do belly breathing if it is helpful).
2. Drink liquids. (Warm, clear ones are best).
3. Take medication if prescribed.

Good tasting WARM LIQUIDS include: tea, lemonade, coffee, clear soup, and apple cider.

Drink WARM LIQUIDS at the first signs of and during an asthma attack. Warm is beneficial because the esophagus (the tube the liquids pass through on their way to the stomach) is located right up against the trachea, or wind pipe. This allows the warmth from the liquid to spread to the airways and help them relax and dilate.

Drinking very COLD LIQUIDS during an asthma attack might worsen the asthma symptoms, especially in children who are sensitive to cold. Although warm liquids should be strongly encouraged, cold ones are better than nothing at all.

It is important to drink as much LIQUID as possible during an asthma episode. A rough guideline is to drink 1–2 eight ounce glasses every 30 minutes during the first hour of the attack, if the person experiencing the asthma is able. Then continue encouraging liquids until the asthma clears.

A possible sign of PANIC during an asthma attack is the desire for more and more medications, including overuse of a nebulized bronchodilator (neb).

Keep EMERGENCY ROOM RECEIPTS all in one place so that, in case of a severe attack, you can take them with you as a reference for treatment that was successful in the past.

Calling the Doctor

An asthma attack is serious enough to CALL THE DOCTOR when you feel like you need to call the doctor (but are worrying about whether or not you should). Don't agonize. Call.

Some concrete signs that you need to CALL THE DOCTOR RIGHT AWAY are:

- Nothing you are doing, including giving medications, seems to be relieving or stabilizing the asthma symptoms.
- The attack has been severe for so long that you feel like you can't stand it any more.

- Danger signs are observed in your child:
  - — Blue lips or fingernails.
  - — The chest wall moving in and out in the lower rib cage when the child is wheezing or very tight.
  - — Grunting sounds each time the child exhales.

Understanding Asthma Medicines

People METABOLIZE medications at different rates. To find out when your child's particular asthma medication will take effect, peak, and then lose its effectiveness, ask your child's doctor.

If your child FIGHTS TAKING MEDICATIONS, try to find out what his/her reasons are and work with those.

The fewer the number of pills to be taken at a time and the easier they are to take (e.g., not having to divide a pill in half), the better are the chances that the medications will be TAKEN AS PRESCRIBED.

Taking a BAD TASTING MEDICINE with something good tasting such as a piece of bread, candy, or juice often helps cut the bad taste.

Certain medications, when taken before exercise or before encountering some allergen such as horses, can PREVENT AN ASTHMA EPISODE. Discuss this with your child's doctor.

If your child has difficulty waking up for MIDNIGHT MEDICATIONS and a change of schedule is not possible, having him/her set and wake up to an alarm clock often does the trick.

If asthma attacks occur often in the MIDDLE OF THE NIGHT, changing the medication schedule so the meds cover the night better may help. Sleeping on two pillows also may help.

Do not use inhaled steroids (beclomethasone dipropionate, Beclovent, Vanceril, dexamethasone, Decadron) or cromolyn sodium (Intal) DURING AN ASTHMA ATTACK. Neither will help the attack and they may even worsen it.

Depending on which THEOPHYLLINE-BASED MEDICATION your child uses, it may take up to 2 days to get a consistent therapeutic level of medication in the blood. Therapeutic in this case means that the theophylline blood level is high enough to control the asthma symptoms but low enough to cause the fewest possible side effects.

For those who do not take round-the-clock theophylline medications, it is handy to keep LIQUID THEOPHYLLINE on hand for an ACUTE ATTACK because it starts taking effect in only about 30 minutes.

SMOKING and exposure to tobacco smoke can reduce the amount of theophylline in the blood, making it necessary to take higher dosages of medicine than would ordinarily be necessary for control of the asthma.

Each NEBULIZER (bronchodilator spray) contains approximately 20 whiffs per milliliter of medication. A 15 ml. container of Alupent, for example, contains about 300 whiffs of medicine. This means, then, that if you are buying a new 15 ml. neb once a month, an average of 10 whiffs a day are being used from that neb. In most cases this indicates overuse.

OVERUSING A NEB refers to habitually using the neb on an AS NEEDED basis four or more times a day; that is, without the doctor's knowledge or consent.

If OVERUSING A NEBULIZER is a problem, try to avoid having the child carry it around with him/her by leaving one at school and one at home.

Getting More Information

In order to remember your QUESTIONS for the doctor, write them down as you think of them and take the list with you to the office.

Another good person to ANSWER your QUESTIONS about MEDICINES is a pharmacist.

Your local chapter of the American Lung Association is a good source for free ASTHMA INFORMATION pamphlets. These pamphlets can be very educational for friends, relatives, teachers, etc. who want to know more about asthma or who don't seem to understand the condition.

The National Heart, Lung, and Blood Institute (NHLBI) has prepared a READING AND RESOURCE LIST of information sources for asthma. It includes books, pamphlets, and films on asthma; journal articles about asthma self-management programs; and descriptions of organizations that provide information and services to persons with asthma. Free copies may be obtained by writing to NHLBI, Asthma Project, Building 31, Room 4A21, Bethesda, Maryland 20205.

Detailed information on SPECIFIC ASTHMA MEDICATIONS may be obtained at a nominal charge from the U.S. Pharmacopoeia, 12601 Twinbrook Parkway, Rockville, Maryland, 20852.

Colorado, as well as many other states, requires that a PATIENT REPRESENTATIVE be available 24 hours a day at all hospitals and clinics of 60 inpatient beds or more. Patient representatives help families understand hospital routines and act as go-betweens when patients have trouble communicating with medical personnel.

ATTACK MANAGEMENT

The time to treat an asthma attack or episode is when the symptoms first appear. These symptoms may include shortness of breath, coughing, a slightly tight feeling in the chest, etc. By "catching" an attack early and treating it quickly, the chances of having a severe attack are greatly reduced. The later an attack is treated, the more difficult it is to restore normal breathing patterns.

Attack Management Steps

Your child should follow these simple and easy steps used by children at the National Asthma Center when he or she suspects that an asthma attack may be coming:

1. Rest and Relax.
2. Drink Warm Liquid.
3. Use Medicines Prescribed for an Attack.

1. *Rest and Relax.* At the first sign of breathing difficulties, the child should STOP and rest. This means sitting down and resting for at least 10 minutes. Relaxing may be explained as letting go, getting as comfortable as possible and staying that way for a while. Diaphragmatic breathing or "belly breathing" may help children relax by giving them something concrete to do, and thus help them gain control over their asthma. Children who panic or have a hard time settling down may need to practice progressive relaxation before they can relax during an attack or episode. If the child does panic, progressive relaxation is probably best taught by a professional trained in this technique. Progressive relaxation does not take a long time to learn, but must be practiced to be effective. (See section PRACTICING RELAXATION.)

2. *Drink Warm Liquid.* It should be taken slowly rather than all at once. Warm liquid is preferred because it helps the bronchial tubes relax. Very cold liquid may actually hinder getting an attack under control. Getting and drinking something warm is a step that a child can do for him or herself. As soon as the child is old enough, sit down and discuss warm things that he or she likes to drink. Make sure there is always a supply of those things and encourage the child to get them for him- or herself.

3. *Use any Medicines as Prescribed for an Attack.* Different types of medicine are used for attacks. Be sure that you understand how to use whatever medicines your doctor prescribes. Call your doctor if you realize that you need clarification on certain points. (Be sure and read the sections on WHIFFERS, PUFFERS, etc. . . and MEDICATIONS FOR ASTHMA.)

Taking Responsibility for Managing an Attack

Management steps #1 and #2 are things that children can do themselves. It is important that children are taught that resting and drinking liquids are things that they can do on their own to help themselves.

Depending upon the age of the child, set up some agreements in your family as to when the child should let you know about his or her breathing difficulty. With an older child, it may be the child's responsibility to take the first two steps, then let you know if no improvement in breathing has been noted after 15 minutes. If the child is very young, you may instruct the child to let you know as soon as he/she realizes there are breathing problems. Then you can provide such prompts as, "I'm glad that you came and told me that you're having a little trouble breathing.

What can you do to help your breathing get better?" If the child suggests warm water, or resting, give praise for the child's remembering. Then be sure that the child takes his or her own advice. If the child has forgotten what to do, then remind him or her about the steps and help (but do not do it all yourself) the child take those steps.

And what if the preceding steps don't work? That may happen for a variety of reasons. Later, after the attack is under control, analyze why the attack got worse. Was there anything that you or your child could have done differently that may have kept the attack from worsening? Sometimes you may be able to plan new strategies for dealing with attacks in the future. Sometimes there may not be anything that you or your child could have done differently to gain control of the attack.

When to Call the Doctor

Parents are sometimes reluctant to call the doctor because they don't want to be a "bother." If the child seems to be having a serious asthma attack, some important points to remember are:

Breath is life. It is nothing to fool around with. If you have any doubts about the severity of an attack, get medical help first. Then ask if you should have brought the child in or should have waited. In this way, you can learn to better judge those things for yourself in the future.

If the child's lips or fingernails are turning blue or if he or she seems to be breathing shallowly and focusing all attention on breathing, get help. You cannnot always hear wheezing during a serious attack, so don't rely upon that as a sign. If a child is in trouble and nothing is done to relieve bronchoconstriction, or nothing relieves it, the child will go into *status asthmaticus.* This is a serious attack where conventional asthma treatments do not help. It requires specialized care and attention.

If in doubt, call. Don't wait until the last minute to call. A phone call to your doctor costs next to nothing and could prevent a great deal of worry.

Asthma medications take a varying amount of time to work depending upon the specific kind. Ask your doctor to give you some guidelines about the particular medication that your child is taking. How soon after your child takes the medication should you begin to see it take effect? If it doesn't seem to be taking effect, how long before you can give more?

ANSWER KEY FOR ADULT ATTITUDE SURVEY

Compare the answers on the survey taken during Session 1 with that taken during Session 8. At the end of the Living with Asthma program, parents should agree with questions 1, 4, 5, 7, 8, 10, 13, 15, 17, 19, 21 and disagree with questions 2, 3, 6, 9, 12, 14, 16, 18, 20, 23, 24 if they have adopted all the attitudes and practices associated with asthma self-management for their child. The answers to questions 11 and 22 will vary depending on individual situations.

ANSWER KEY FOR ASTHMA INFORMATION QUIZ

True/False:

1. T
2. T
3. T
4. T
5. F
6. T
7. F
8. F
9. T
10. F
11. F
12. F

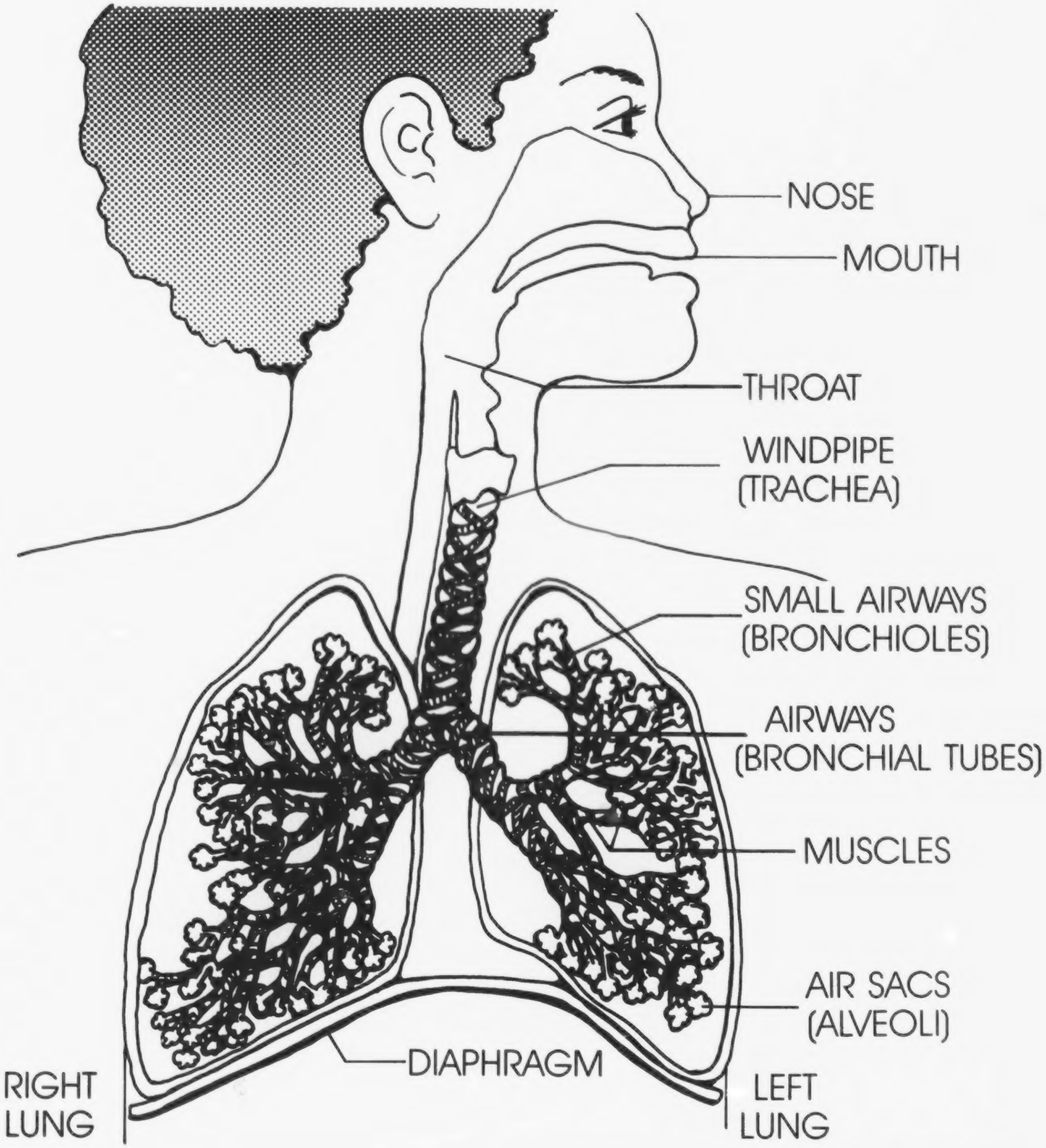
Circle words:

1. inside
2. without
3. does not
4. can

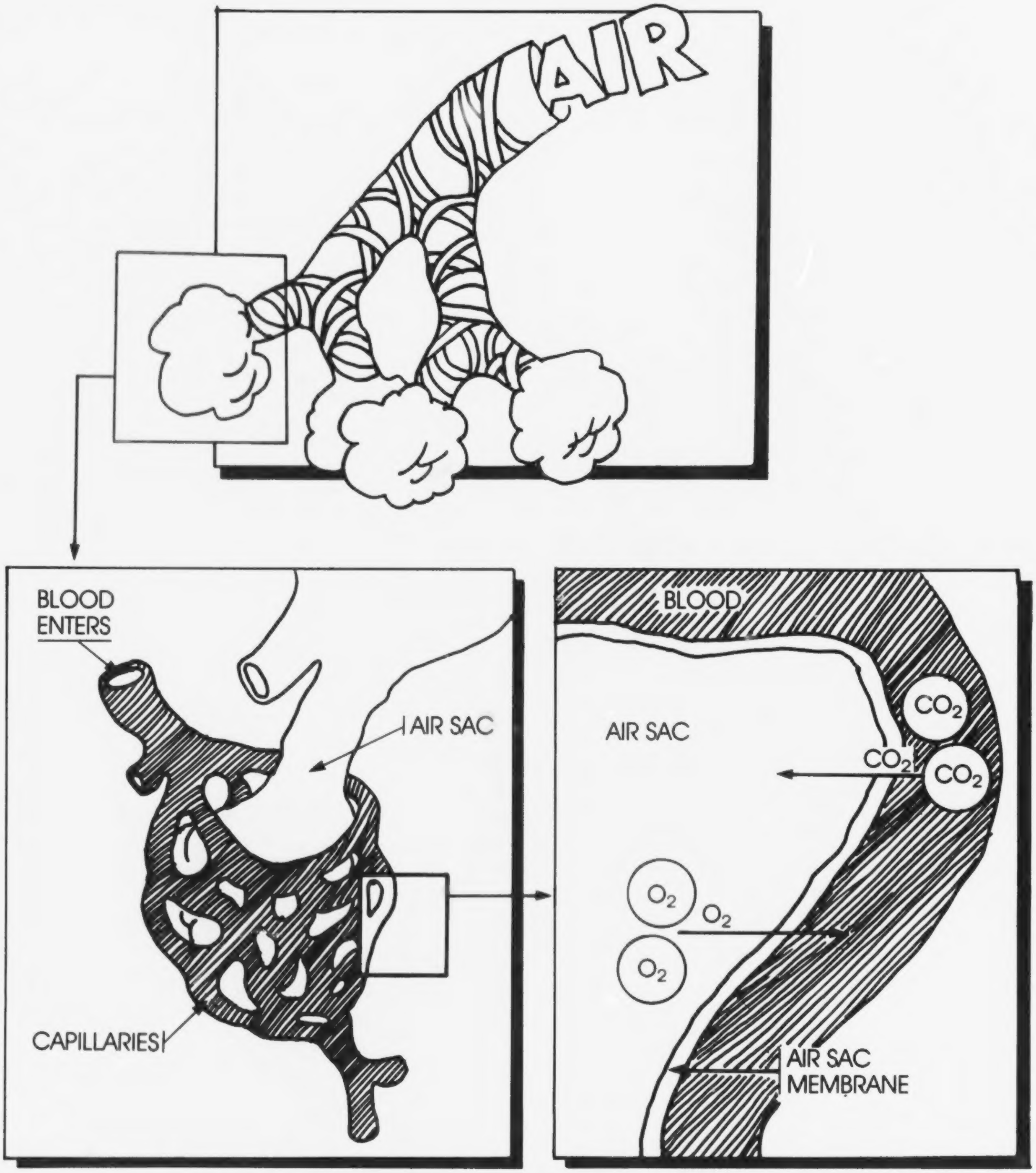
Correct phrases:

1. b,d
2. c
3. a,b,c
4. b,d
5. a,c
6. c
7. b,c,d
8. b,c,d

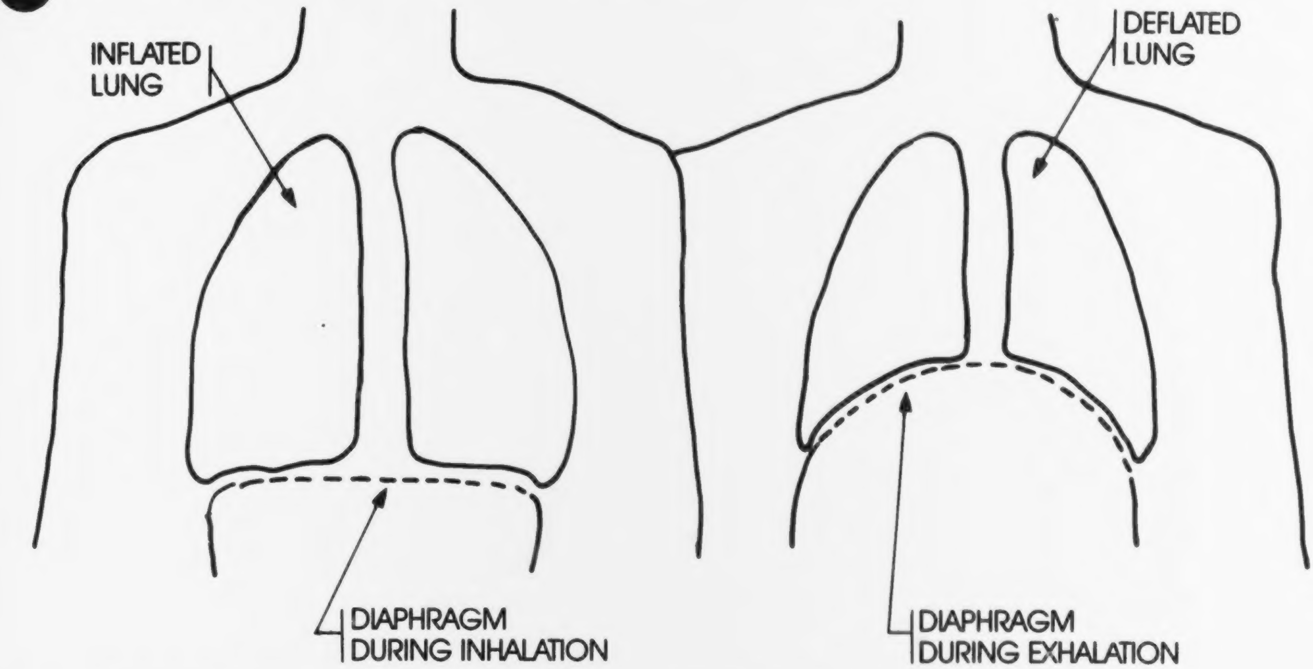
1. NORMAL **LUNGS**

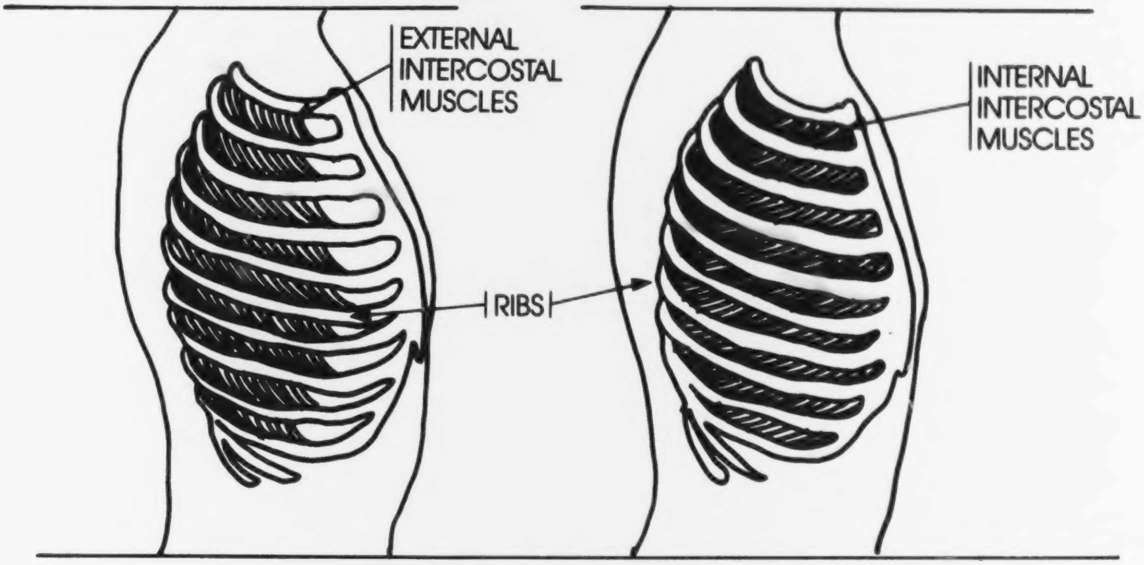

NOSE
MOUTH
THROAT
WINDPIPE (TRACHEA)
SMALL AIRWAYS (BRONCHIOLES)
AIRWAYS (BRONCHIAL TUBES)
MUSCLES
AIR SACS (ALVEOLI)
DIAPHRAGM
RIGHT LUNG
LEFT LUNG

2. OXYGEN EXCHANGE IN THE AIR SACS


AIR
BLOOD ENTERS
AIR SAC
CAPILLARIES
BLOOD
AIR SAC
CO_2
CO_2
CO_2
O_2
O_2
O_2
AIR SAC MEMBRANE

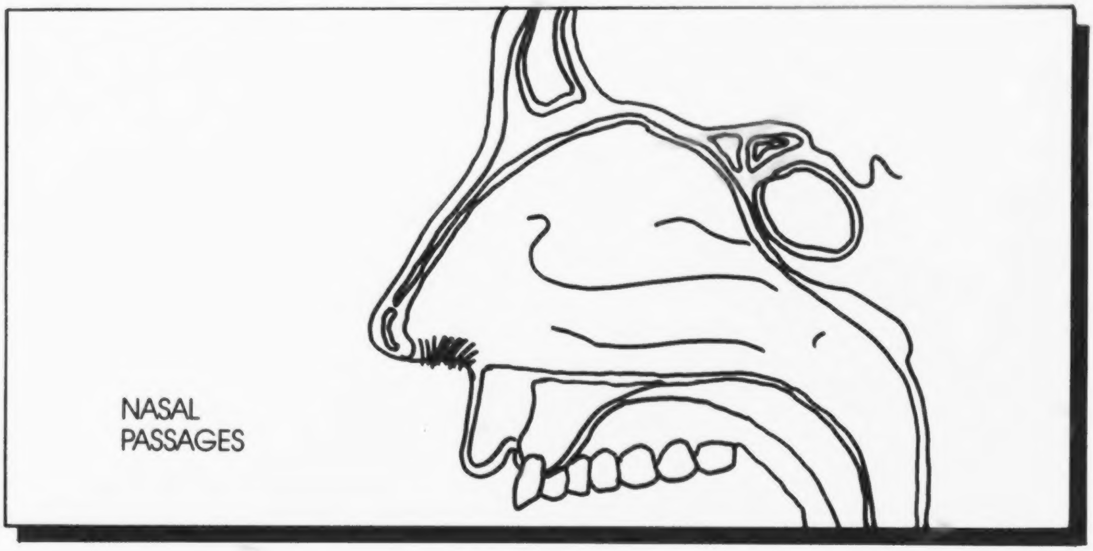
3. **MUSCLES** OF BREATHING

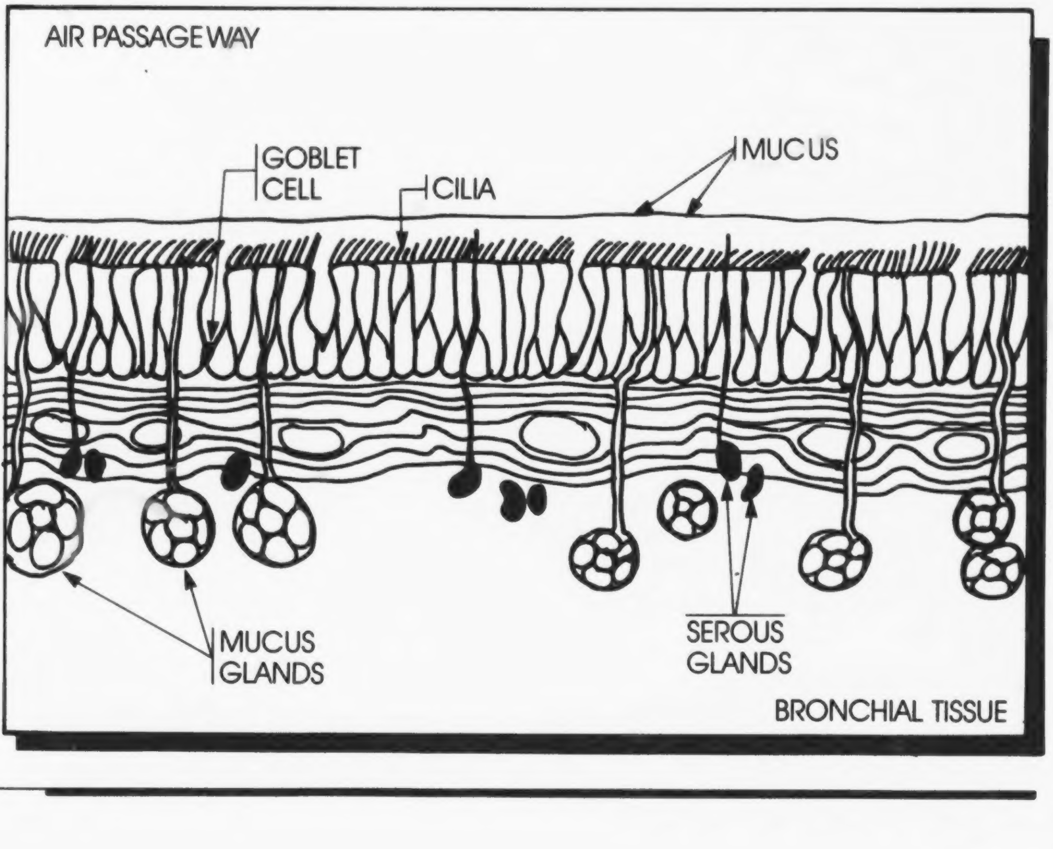

INFLATED LUNG
DEFLATED LUNG
DIAPHRAGM DURING INHALATION
DIAPHRAGM DURING EXHALATION


EXTERNAL INTERCOSTAL MUSCLES
INTERNAL INTERCOSTAL MUSCLES
RIBS

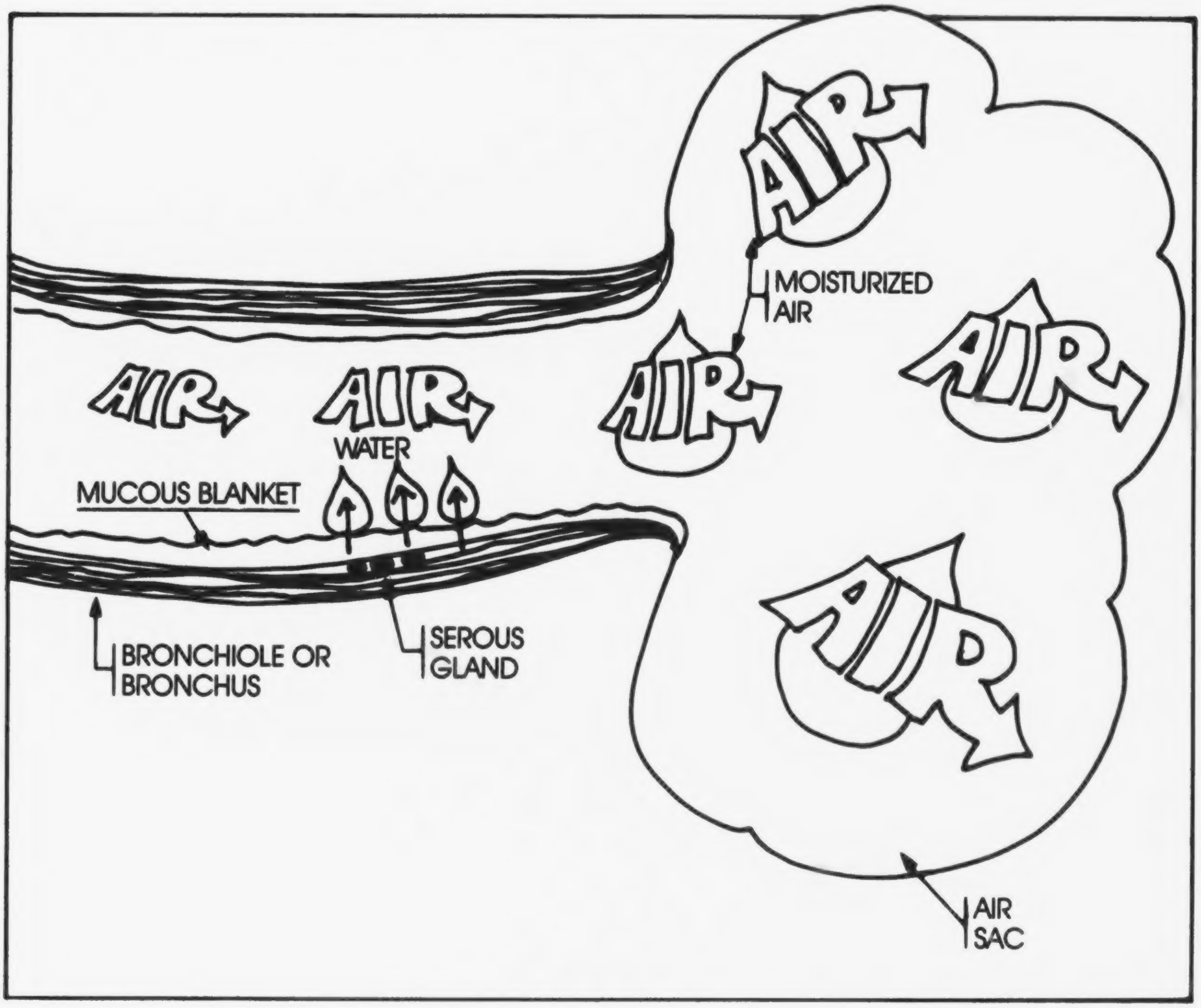
CHEST WALL MUSCLES—EXTERNAL AND INTERNAL INTERCOSTAL MUSCLES
SIDE VIEW

4. AIR IS **CLEANED**

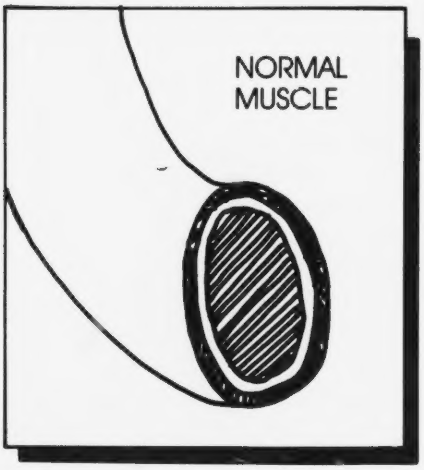

NASAL
PASSAGES

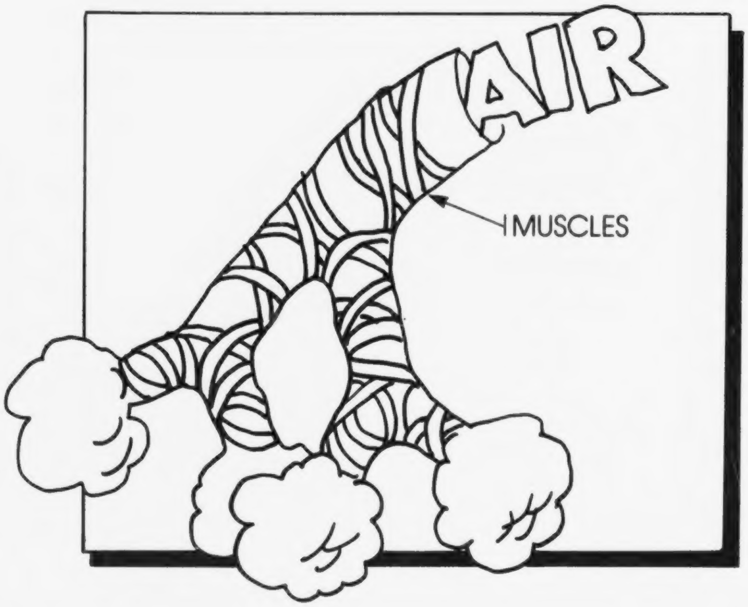

AIR PASSAGEWAY
GOBLET
CELL
CILIA
MUCUS
MUCUS
GLANDS
SEROUS
GLANDS
BRONCHIAL TISSUE

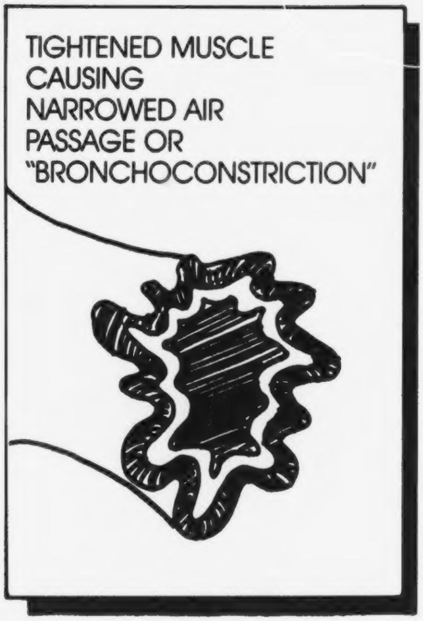
5. AIR IS **MOISTURIZED**

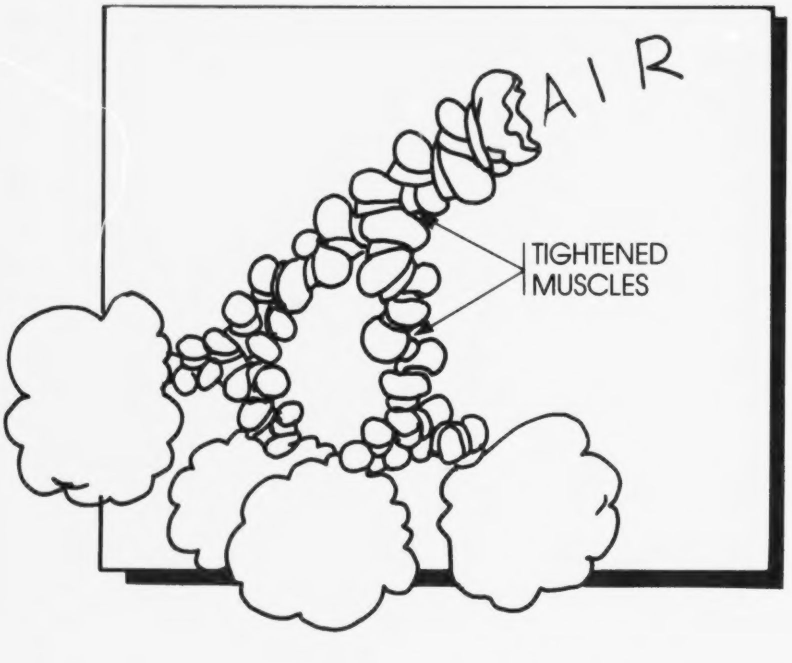

AIR
MOISTURIZED AIR
AIR
AIR
AIR
AIR
WATER
MUCOUS BLANKET
AIR
BRONCHIOLE OR BRONCHUS
SEROUS GLAND
AIR SAC

6. **MUSCLES** SURROUNDING AIRWAYS

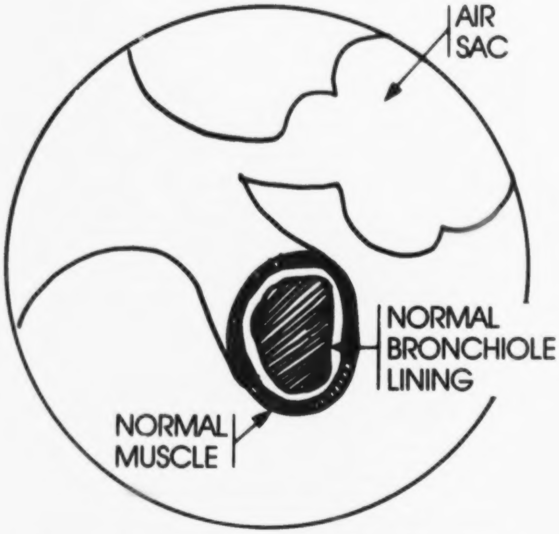

NORMAL
MUSCLE


AIR
MUSCLES

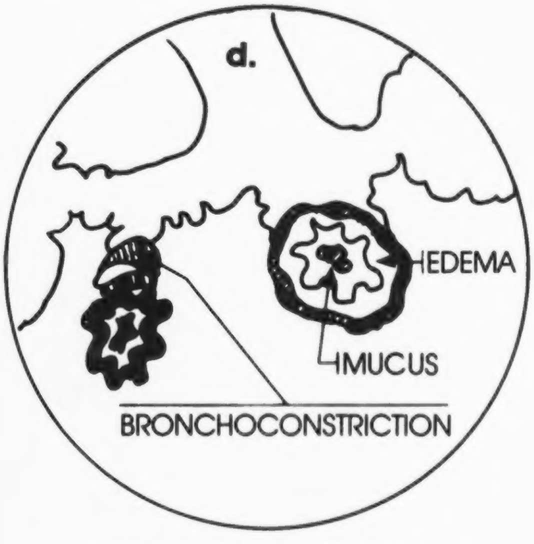

TIGHTENED MUSCLE CAUSING NARROWED AIR PASSAGE OR "BRONCHOCONSTRICTION"


AIR
TIGHTENED
MUSCLES

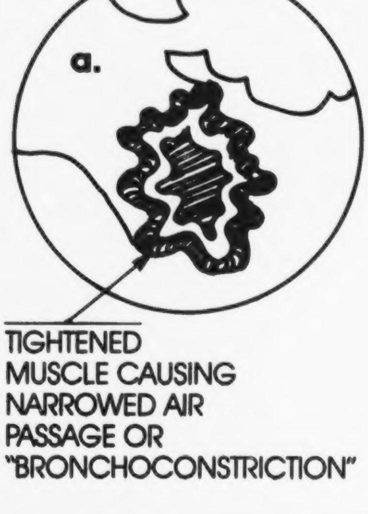
7. WHAT HAPPENS DURING AN **ASTHMA ATTACK**

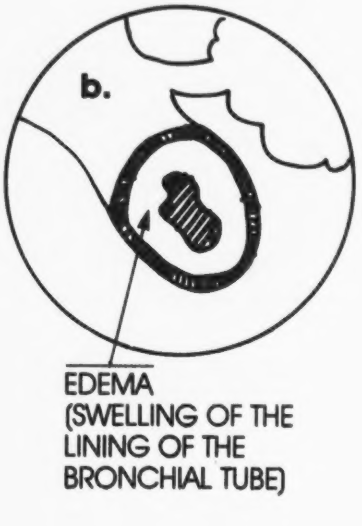

AIR
SAC
NORMAL
BRONCHIOLE
LINING
NORMAL
MUSCLE

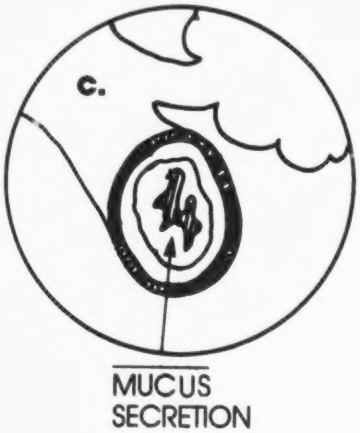
NORMAL INTERIOR OF BRONCHIOLE


d.
EDEMA
MUCUS
BRONCHOCONSTRICTION

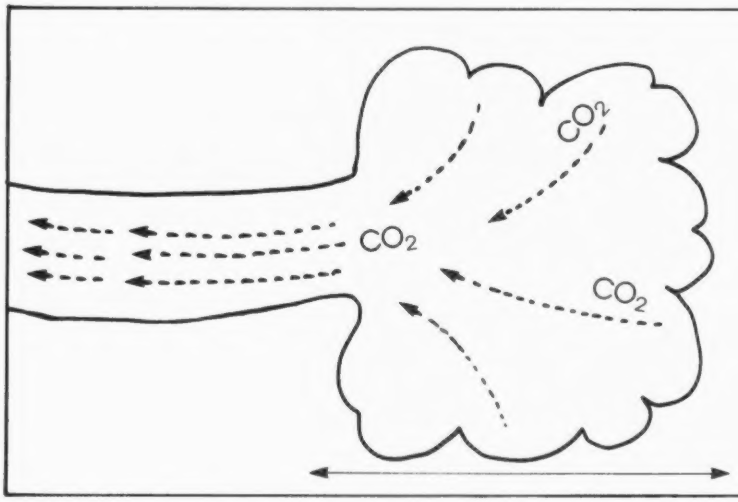
INTERIOR OF BRONCHIOLE
DURING AN ASTHMA ATTACK


a.
TIGHTENED
MUSCLE CAUSING
NARROWED AIR
PASSAGE OR
"BRONCHOCONSTRICTION"


b.
EDEMA
(SWELLING OF THE
LINING OF THE
BRONCHIAL TUBE)

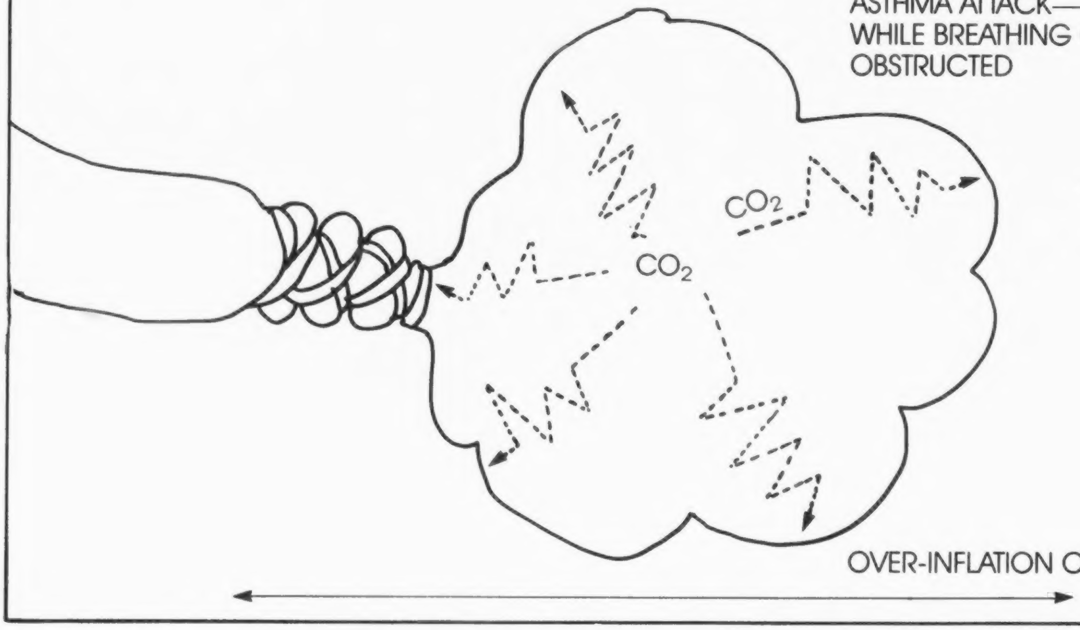

c.
MUCUS
SECRETION

8. AIR **TRAPPING** AND BUILD-UP OF CO_2 IN AIR SACS



NORMAL AIRWAY
WHILE BREATHING OUT—
UNOBSTRUCTED

NORMAL AIR SAC INFLATION



AIRWAY DURING
ASTHMA ATTACK—
WHILE BREATHING OUT
OBSTRUCTED

OVER-INFLATION OF AIR SACS

SUMMARY OF ASTHMA ATTACK **MANAGEMENT** AND **CONTROL**

I. **BE AWARE**
II. **BEWARE**
III. **CAUTION**
IV. **DANGER**

I. BE AWARE
Between Attacks

Your child can help prevent attacks by:

- Avoiding known asthma triggers such as allergens, irritants like cigarette smoke, infections, weather, emotions, etc. as much as possible.
- Practicing breathing exercises.
- Knowing his/her limits for physical activities.
- Drinking plenty of liquids, preferably warm.
- Taking medication as prescribed by the physician.
- Following good general health practices: getting adequate sleep, eating properly, exercising regularly.

You and your child can prevent future attacks from becoming serious by:

- Analyzing the management of previous attacks.
  What corrective measures worked?
  What corrective measures didn't work?

II. BEWARE of Early Warning Indicators

Your child can prevent an oncoming attack from getting worse by:

- Recognizing early warning indicators:

  Physical Symptoms such as: coughing, tightness in chest, decreased exercise tolerance, feeling tired, itchy throat, watery eyes, feverish, dry mouth, clammy skin, facial color change, sore throat, scratchy throat, heart beats faster, head plugged up, stroking of chin or throat.

  Emotional Symptoms such as: feeling spacey, getting upset easily, feeling nervous, feeling grumpy, feeling restless.
- Following attack management steps—resting and drinking liquids (preferably warm) if early warning indicators are experienced.
- Remembering that most attacks come on gradually and the measures taken early may be very helpful in preventing a full-blown attack.
- Using belly breathing and progressive muscle relaxation to help to gain control.

III. CAUTION
During An Attack

Your child can reduce the severity of breathing problems by:

- Continuing to rest and relax.
- Using belly breathing and progressive muscle relaxation if they help.
- Taking medication prescribed for attacks.
- Continuing to drink plenty of liquids, preferably warm.

IV. DANGER
When Management Steps Bring No Relief

You and your child should:

- Recognize the signs of a severe attack: such as flared nostrils, hands over head, blue lips and/or fingernails, perspiration, raised shoulders, breathing from the neck up.

- SEEK MEDICAL ATTENTION RIGHT AWAY. Your child may go into status asthmaticus, a serious attack requiring specialized care. When conventional asthma treatments DO NOT HELP, immediate medical attention is needed.

COMMON QUESTIONS ABOUT ASTHMA AND ASTHMA MANAGEMENT

What Is an "Asthma Attack" or an "Asthma Episode"?

These are general terms that encompass all types of asthma symptoms and all types of asthma attacks. They cover situations ranging from slight difficulties in breathing and wheezing to acute attacks to status asthmaticus.

For the child with asthma, any difficulty in breathing might be called an asthma attack or an asthma episode.

What Does the Term "Acute Attack" Mean?

An acute attack is any series of asthma symptoms that is severe enough to cause a person to stop what he/she is doing.

What Is "Status Asthmaticus"?

Status asthmaticus refers to an asthma attack that is getting progressively worse and that does not respond to asthma medicines normally used during an attack. This situation requires emergency treatment in a hospital or a doctor's office.

How Can Status Asthmaticus Be Prevented?

Serious asthma attacks can be prevented by avoiding situations that trigger asthma and by taking self-management steps in the very early stages of an attack.

What Happens During an Asthma Attack?

An asthma attack occurs when there is a blockage in the breathing tubes. This blockage is caused by three things:

1. **Bronchoconstriction:** the muscles that surround the breathing tubes tighten and make the airway smaller.
2. **Edema or swelling:** the lining of the breathing tubes swells and expands inward, making the opening where the air flows even smaller.
3. **Mucus secretion:** the membranes that line the breathing passages secrete extra mucus that may become thick and stringy and form plugs that further block the air passages.

What Causes Asthma:

Asthma is caused by an inherent sensitivity or twitchiness in the airways (breathing tubes or bronchial tubes).

What Is an Asthma Trigger?

A trigger is something that sets off an asthma attack.

What Are Common Asthma Triggers?

Common asthma triggers are allergens, such as pollens, foods, dust, mold, feathers, or animal dander; irritants such as smoke or odors; respiratory infections; emotional stress; or too much exercise.

What Are Some Ways to Avoid Asthma Triggers?

1. If an allergen like dust or pollen is a trigger, have your child avoid that allergen.
2. If a certain food is a trigger, your child should not eat it.
3. If your child is allergic to dust and mold, clean the child's bedroom three times a week. The child can help you put toys away so that they will not collect dust.
4. If air pollution or weather changes bother your child, have him/her stay inside as much as possible when such outdoor conditions exist.
5. If respiratory infections trigger your child's asthma, he/she should avoid adults and children who have respiratory infections and take steps to stay healthy; this includes getting enough rest, eating properly, and drinking plenty of liquids. If your child does get a respiratory infection, see that your child is treated or takes care of it immediately.

Is It True that Asthma Is "All in the Head"?

No. This is *not* true at all. People who have asthma have an inherent sensitivity in the lungs. When these people are exposed to certain stimuli, the lungs react in a way that makes it hard to breathe. There are many types of stimuli that can provoke or "trigger" this asthmatic reaction in the lungs. Some of these triggers include allergens, irritants, certain foods, strong emotions, or too much exercise.

A person might deliberately expose himself/herself to a trigger, such as smoke or pollen. He/she might also either deliberately or not deliberately get into a strong enough emotional state so as to precipitate an attack, or may exercise too hard and set off an attack. However, in the absence of triggers, a person with asthma cannot think himself or herself into an asthma attack.

Do Emotions Cause Asthma?

Emotions do not cause asthma. The cause is the physical reactivity or sensitive state of the lungs. Strong emotions may trigger an attack or make the job of controlling an attack a lot harder. However, they are not the underlying cause of the asthma itself and do not cause the person to develop the "lung twitchiness" in the first place.

What Can a Person Do to Avoid or Prevent Asthma Attacks?

1. Avoid triggers known to set off his/her attacks.
2. Know personal limits for exercise and not exceed them.
3. Take prescribed medicines on time, in the correct manner, and with the correct dose.
4. Avoid respiratory infections.
5. Follow good health habits such as getting enough sleep, eating properly, resting when needed, exercising properly.

How Can a Person Handle/Manage an Asthma Attack?

At the first sign of an oncoming attack, a person should:

1. Stop and rest.
2. Drink some liquids.
3. Take asthma medicines as prescribed.

It is important to be aware of the early warning signs of an attack and to take steps for self-management as early as possible. This way, a really serious attack often can be prevented.

What Can Be Done to Facilitate These Self-Management Steps?

If the attack occurs at home, the child with asthma may find it helpful to do quiet things during the preattack resting period. Such things include reading, playing cards, sleeping, or whatever the child likes to do that can be done with minimal physical exertion. The parents should have any needed materials ready so children can easily find them.

When drinking liquids, the child should make sure the beverage is not too cold.

How Can a Child Handle an Attack that Comes on with Hard Exercise?

The same three self-management steps as above should be followed: (1) stop and rest, (2) drink some liquids, (3) take medicines as prescribed. These steps are the same for an attack caused by other precipitants.

However, if the child consistently performs the above steps and still experiences asthma during exercise, he/she should talk to the doctor about the situation. The doctor may be able to prescribe a medicine that can be taken just before exercise to help prevent attacks.

What Role Does Drinking Liquids Have in Asthma Management?

Drinking liquids has a twofold role in asthma self-management. First, it is important for the child with asthma to drink plenty of liquids every day, even when he/she is not having an asthma attack. Second, during an attack, drinking warm liquids is an important attack management step.

Why Is Drinking Liquids Important?

During an attack, the child with asthma often breathes harder and faster, and more water is evaporated from the mucous blanket in the airways. Also, during an attack, the mucus tends to get thick and stringy and to form plugs as it starts to dry out.

Drinking liquids during an attack helps to replace the water that is lost by evaporation. The liquid that is added back to the body helps to thin the consistency of the mucus and makes it easier for the mucociliary escalator to move mucus up and out. This action helps to prevent airway blockage by mucus. These same considerations also are important in the everyday management of asthma because drinking plenty of liquids keeps the mucus well moisturized.

Why Is Warm Water Recommended During an Asthma Attack?

Water enters the body through the esophagus, or eating tube, which lies just behind the windpipe. The warmth of the water radiates to the windpipe, or trachea, and helps to relax it.

Should a Child with Asthma Take Gym Class or Should the Parents Ask the Doctor to Excuse the Child from Gym?

Exercise is important for a child with asthma. He/she does need to exercise to stay healthy, just like any other child. It is advisable for a child with asthma to participate in gym class if he/she is feeling well. However, children with asthma should be careful not to get overtired when exercising. They should be aware of their own limits for exercise and not exceed them. If the child feels an attack coming on, he/she should be allowed to stop and rest and to follow the other self-management steps. It is important that gym teachers understand that "short burst" sports are well tolerated by children with asthma, while sustained exertion, such as running laps, is potentially dangerous.

When a Person Is Taking Asthma Medicines on Time Every Day and Is Generally Doing Things to Control the Condition, Is It Still Possible for an Attack to Occur All of a Sudden Without Any Early Warning Signs?

No and yes. Usually an attack does give warning, with a slow progression of symptoms that may begin days in advance. With awareness, the person may begin to take steps to ward off the impending attack. However, once in a while an acute attack may come on suddenly. Such a situation might occur if the person comes in contact with a substance to which he/she is highly allergic, is exposed to a large dose of allergen, experiences multiple triggers at one time, or is exposed to a severe weather change. Under normal circumstances, however, an attack should come on gradually with warning.

What Are Some of the Early Signs of an Asthma Attack?

Coughing, shortness of breath, tightness in the chest, pain in the chest, an itchy chin or throat, a funny feeling in the neck, or feeling really tired or grumpy are among the early warning signs of an attack.

Why May a Child's Chest Feel Sore After an Attack?

During an asthma attack, a child works hard to get air in and out of the lungs and uses auxiliary chest muscles to do so. After all that exertion, it is not surprising that the chest may feel sore.

Will a Child Outgrow Asthma?

It is hard to predict for any one child. Some children will outgrow asthma and others will not. Children who seem to have no outward signs of asthma as they get older may still have decreased lung function when it is measured by certain lung tests.

The tendency for asthma will always be there, and the child may or may not develop asthma again as an adult.

Usually, when a child has asthma, a change for better or worse appears around the time of puberty.

How Is Asthma Different from Emphysema or Other Chronic Lung Problems?

Unlike emphysema, which is an irreversible lung disease, asthma is reversible. This means that the symptoms and lung changes that occur during an attack go back to almost normal when the attack is over. An asthma attack does not last forever, and the person with asthma can breathe normally between attacks. In contrast, a person with emphysema does not regain normal breathing capacity once the disease has begun.

How Can You Find Out What Your Child Is Allergic To?

Doctors try to determine what causes allergic reactions by conducting an allergy history. This means the doctor asks the child with asthma and his/her parents what foods or substances they recall as having triggered an asthma attack or caused an allergic reaction such as a rash. As a second step, the doctor performs a skin test.

How Do Skin Tests Work?

A drop of allergenic extract is placed in a small scratch on the patient's arm or back. This usually does not hurt and does not leave a scar. An allergenic extract is a dilute dose of a substance like grass pollen, dust, or animal hair. If the person is allergic to the substance, a red bump will appear at the site of the extract in about 20 minutes. If a person is not allergic to the substance, no bump will form. A separate scratch and drop of liquid is administered for each substance tested.

After All the Allergy Skin Test Results Come Back, Will You Know All the Things that the Child Is Allergic To?

No. Tests only give a general indication. They do not give all the answers. For most people, skin tests give a better idea of what a person may be allergic to and what, therefore, may trigger an asthma attack. However, some people cannot identify all their allergic triggers by skin tests. They then have to do some observation and comparing on their own. Relating an asthma attack to an observed exposure to a possible precipitant can also help to identify allergens.

How Can Asthma Be Controlled If It Is Impossible to Pinpoint All the Triggers?

Asthma can be controlled by taking the prescribed asthma medicine regularly and on time and by careful self-management practices such as drinking plenty of liquids and stopping to rest if early warning signs are felt during exercise.

Again, What Are the Asthma Attack Management Steps?

1. Rest and relax.
2. Drink liquids.
3. Take asthma medicine, if it is prescribed for an attack, exactly as the doctor instructed.

Where Can You Find Useful Pamphlets and Information About Asthma that Family Members Can Read?

Consult the publications and organizations listed in the resource list published by the National Heart, Lung, and Blood Institute. To obtain a copy of the reading and resources list, write to: NHLBI, Asthma Project, Building 31, Room 4A21, Bethesda, Maryland 20205.

What Are Some Pointers for Asking Your Doctor Questions About Asthma?

When you schedule your child's appointment, tell the nurse or receptionist that you have some questions and would like to schedule time to discuss them. This way she can allow a little extra time for your appointment, and the doctor will be ready to answer your questions.

As questions come up between doctor's visits, write them down. Keep your questions list in an accessible place so you can find it and add to it easily. Bring the list with you when you talk to the doctor.

VOCABULARY FOR ASTHMA SELF-MANAGEMENT GROUPS

ALLERGEN: A substance to which one is allergic.

ANTECEDENT: Happening before.

ASTHMA ATTACK: Any worsening of breathing that requires an interruption of ongoing activities or requires some procedure to resume normal breathing patterns.

ASTHMA SELF-MANAGEMENT: Taking care of those aspects of the illness that can be affected by a person's own action. Specifically this includes: taking prescribed medications on time and correctly; being aware of the triggers of asthma and, when possible, avoiding them or lessening their effects; beginning preventive measures early in the chain of events that leads to an episode; and, taking the proper treatment steps during an episode. Some other aspects of self-management include: accepting the rights and responsibilities of a consumer of medical services; understanding asthma medications and their side effects; understanding the nature of asthma; and using a medical system efficiently.

ASTHMATIC: A term commonly used to describe a person with asthma. Avoid using this term to label a person who has asthma. According to child psychologist Rudolph Dreikurs, "When we label a child, we see him as we have labeled him. So does he. He identifies himself with his label. This reinforces his faulty self-concept and prevents his moving in a constructive direction."[1]

CHRONIC: Happening repeatedly.

CONCURRENT: Happening at the same time or along with.

CONSEQUENCE: Happening as the result of.

EARLY WARNING SIGNS: The earliest symptoms that breathing problems may be developing.

MEDICATION COMPLIANCE: Taking medications in exactly the way and at the exact time specified by the doctor.

NATURAL CONSEQUENCES: What would naturally occur as the result of an action if there were no intervention.

NEGATIVE REINFORCEMENT: The removal of an adversive stimulus or condition. By taking away the unpleasant situation or consequences, a behavior that was formerly performed infrequently will be increased.

POSITIVE REINFORCEMENT: The procedure of presenting a desired stimulus after a desired behavior or response has occurred. As used in this material, positive reinforcement means some form of expression of approval of a person's behavior.

---

[1] Dreikurs, R. with Soltz, V. **Children: the Challenge,** Hawthorn Books, Inc., 1964.

PROGRAM (FOR BEHAVIOR CHANGE): A plan of action to bring about specific behavior change, including specifying the changes and rewards that will result.

PRECIPITANT: A substance or situation that causes a person to have an asthma attack.

PUNISHMENT: Application of something negative.

SOCIAL LEARNING THEORY: A collection of ideas that are concerned with how people teach people.

TRIGGER: Another word for precipitant.

HELPFUL HINTS FOR ASTHMA SELF-MANAGEMENT

Understanding Asthma

In ASTHMA, the bronchial tubes are overreactive to "normal" environmental events.

During an ASTHMA ATTACK air gets trapped in the lungs so that, as the attack progresses, there is less and less room for fresh air to enter.

Many children with asthma have EXERCISE-INDUCED ASTHMA, that is, asthma brought on by hard exercise. Sometimes medication can prevent this type of asthma. Ask your child's doctor.

Dealing with Common Problems

If you are looking for good BABYSITTERS with whom you can leave your child with asthma, consider these suggestions:

- Form a babysitting co-op among families you trust or who also have children with asthma.
- Contact the medical school if there is one in your area. Often medical, nursing, or other health sciences students need a little extra money and would enjoy babysitting.

In case of an EMERGENCY when parents are out of town, it is a good idea to leave a signed and notarized release form with whoever is taking care of the children. This form authorizes the doctor or hospital to administer emergency care.

If a person with asthma comes into contact with an ALLERGEN such as grass or animals, having him/her bathe, shampoo, and change clothes may prevent an asthma attack or lessen its severity.

When the family goes on VACATION, take a letter from your child's doctor explaining current medications and medical care and what to do in case of a serious asthma attack.

When TRAVELING TO AN UNFAMILIAR AREA, find out where the nearest phone and hospital or emergency facilities are.

MOVING to another part of the country is usually not an effective treatment for asthma or allergies.

It might help your frustration level to know that asthma attacks are very common on such special occasions as BIRTHDAYS AND HOLIDAYS. If this is a problem in your child's case, time out to rest and calm down a little during exciting times will often cut down on the number of these attacks.

Cutting the Cost of Asthma

The LEAST EXPENSIVE kind of theophylline-base medication is Aminophylline USP.

Air conditioners and other equipment or supplies bought for asthma symptom relief can often be taken as a MEDICAL TAX DEDUCTION when computing income taxes.

SUPPLEMENTAL SECURITY INCOME can pay a substantial amount of money per month for chronic medical problems although rules for qualifying for it are very strict. If you would like to find out more, contact any Social Security office.

One goal of GOOD ASTHMA MANAGEMENT is to cut down the cost of asthma by intervening during the early stages of an attack in order to prevent it from worsening.

Managing an Asthma Attack

An asthma episode or attack will rarely come on without warning. This warning is referred to as an EARLY SIGN OF ASTHMA.

If attacks seem to be happening SUDDENLY AND WITHOUT WARNING, try to pinpoint with your child with asthma specific visual signs or sensations that might be occurring before the attack gets bad.

COUGHING is frequently an early sign of asthma.

An early warning sign of breathing problems can be increased PULSE RATE. Although these figures are very variable, at rest:

Normal pulse rate: 70–90 beats per minute
Early warning sign: 120–140 beats per minute

A quickened BREATHING RATE can sometimes be an early sign of asthma. To check the rate, look at the chest and count each rise/fall. The average breathing rate AT REST normally is 20 breaths per minute; 30 breaths per minute and faster AT REST can be a sign that breathing is becoming more difficult.

Being TIRED and GRUMPY is often an early sign of an asthma episode.

At the FIRST SIGN OF AN ASTHMA ATTACK:

1. Rest and relax (and do belly breathing if it is helpful).
2. Drink liquids. (Warm, clear ones are best).
3. Take medication if prescribed.

Good tasting WARM LIQUIDS include: tea, lemonade, coffee, clear soup, and apple cider.

Drink WARM LIQUIDS at the first signs of and during an asthma attack. Warm is beneficial because the esophagus (the tube the liquids pass through on their way to the stomach) is located right up against the trachea, or wind pipe. This allows the warmth from the liquid to spread to the airways and help them relax and dilate.

Drinking very COLD LIQUIDS during an asthma attack might worsen the asthma symptoms, especially in children who are sensitive to cold. Although warm liquids should be strongly encouraged, cold ones are better than nothing at all.

It is important to drink as much LIQUID as possible during an asthma episode. A rough guideline is to drink 1–2 eight ounce glasses every 30 minutes during the first hour of the attack, if the person experiencing the asthma is able. Then continue encouraging liquids until the asthma clears.

A possible sign of PANIC during an asthma attack is the desire for more and more medications, including overuse of a nebulized bronchodilator (neb).

Keep EMERGENCY ROOM RECEIPTS all in one place so that, in case of a severe attack, you can take them with you as a reference for treatment that was successful in the past.

Calling the Doctor

An asthma attack is serious enough to CALL THE DOCTOR when you feel like you need to call the doctor (but are worrying about whether or not you should). Don't agonize. Call.

Some concrete signs that you need to CALL THE DOCTOR RIGHT AWAY are:

- Nothing you are doing, including giving medications, seems to be relieving or stabilizing the asthma symptoms.
- The attack has been severe for so long that you feel like you can't stand it any more.
- Danger signs are observed in your child:
  - —Blue lips or fingernails.
  - —The chest wall moving in and out in the lower rib cage when the child is wheezing or very tight.
  - —Grunting sounds each time the child exhales.

Understanding Asthma Medicines

People METABOLIZE medications at different rates. To find out when your child's particular asthma medication will take effect, peak, and then lose its effectiveness, ask your child's doctor.

If your child FIGHTS TAKING MEDICATIONS, try to find out what his/her reasons are and work with those.

The fewer the number of pills to be taken at a time and the easier they are to take (e.g., not having to divide a pill in half), the better are the chances that the medications will be TAKEN AS PRESCRIBED.

Taking a BAD TASTING MEDICINE with something good tasting such as a piece of bread, candy, or juice often helps cut the bad taste.

Certain medications, when taken before exercise or before encountering some allergen such as horses, can PREVENT AN ASTHMA EPISODE. Discuss this with your child's doctor.

If your child has difficulty waking up for MIDNIGHT MEDICATIONS and a change of schedule is not possible, having him/her set and wake up to an alarm clock often does the trick.

If asthma attacks occur often in the MIDDLE OF THE NIGHT, changing the medication schedule so the meds cover the night better may help. Sleeping on two pillows also may help.

Do not use inhaled steroids (beclomethasone dipropionate, Beclovent, Vanceril, dexamethasone, Decadron) or cromolyn sodium (Intal) DURING AN ASTHMA ATTACK. Neither will help the attack and they may even worsen it.

Depending on which THEOPHYLLINE-BASED MEDICATION your child uses, it may take up to 2 days to get a consistent therapeutic level of medication in the blood. Therapeutic in this case means that the theophylline blood level is high enough to control the asthma symptoms but low enough to cause the fewest possible side effects.

For those who do not take round-the-clock theophylline medications, it is handy to keep LIQUID THEOPHYLLINE on hand for an ACUTE ATTACK because it starts taking effect in only about 30 minutes.

SMOKING and exposure to tobacco smoke can reduce the amount of theophylline in the blood, making it necessary to take higher dosages of medicine that would ordinarily be necessary for control of the asthma.

Each NEBULIZER (bronchodilator spray) contains approximately 20 whiffs per milliliter of medication. A 15 ml container of Alupent, for example, contains about 300 whiffs of medicine. This means, then, that if you are buying a new 15 ml neb once a month, an average of 10 whiffs a day are being used from that neb. In most cases this indicates overuse.

OVERUSING A NEB refers to habitually using the neb on an AS NEEDED basis four or more times a day; that is, without the doctor's knowledge or consent.

If OVERUSING A NEBULIZER is a problem, try to avoid having the child carry it around with him/her by leaving one at school and one at home.

Getting More Information

In order to remember your QUESTIONS for the doctor, write them down as you think of them and take the list with you to the office.

Another good person to ANSWER your QUESTIONS about MEDICINES is a pharmacist.

Your local chapter of the American Lung Association is a good source for free ASTHMA INFORMATION pamphlets. These pamphlets can be very educational for friends, relatives, teachers, etc. who want to know more about asthma or who don't seem to understand the condition.

The National Heart, Lung, and Blood Institute (NHLBI) has prepared a READING AND RESOURCE LIST of information sources for asthma. It includes books, pamphlets, and films on asthma; journal articles about asthma self-management programs; and descriptions of organizations that provide information and services to persons with asthma. Free copies may be obtained by writing to NHLBI, Asthma Project, Building 31, Room 4A21, Bethesda, Maryland 20205.

Detailed information on SPECIFIC ASTHMA MEDICATIONS may be obtained at a nominal charge from the U.S. Pharmacopoeia, 12601 Twinbrook Parkway, Rockville, Maryland, 20852.

Colorado, as well as many other states, requires that a PATIENT REPRESENTATIVE be available 24 hours a day at all hospitals and clinics of 60 inpatient beds or more. Patient representatives help families understand hospital routines and act as go-betweens when patients have trouble communicating with medical personnel.

ATTACK MANAGEMENT

The time to treat an asthma attack or episode is when the symptoms first appear. These symptoms may include shortness of breath, coughing, a slightly tight feeling in the chest, etc. By "catching" an attack early and treating it quickly, the chances of having a severe attack are greatly reduced. The later an attack is treated, the more difficult it is to restore normal breathing patterns.

Attack Management Steps

Your child should follow these simple and easy steps used by children at the National Asthma Center when he or she suspects that an asthma attack may be coming:

1. Rest and Relax.
2. Drink Warm Liquid.
3. Use Medicines Prescribed for an Attack.

1. **Rest and Relax.** At the first sign of breathing difficulties, the child should STOP and rest. This means sitting down and resting for at least 10 minutes. Relaxing may be explained as letting go, getting as comfortable as possible and staying that way for a while. Diaphragmatic breathing or "belly breathing" may help children relax by giving them something concrete to do, and thus help them gain control over their asthma. Children who panic or have a hard time settling down may need to practice progressive relaxation before they can relax during an attack or episode. If the child does panic, progressive relaxation is probably best taught by a professional trained in this technique. Progressive relaxation does not take a long time to learn, but must be practiced to be effective. (See section PRACTICING RELAXATION.)

2. **Drink Warm Liquid.** It should be taken slowly rather than all at once. Warm liquid is preferred because it helps the bronchial tubes relax. Very cold liquid may actually hinder getting an attack under control. Getting and drinking something warm is a step that a child can do for him or herself. As soon as the child is old enough, sit down and discuss warm things that he or she likes to drink. Make sure there is always a supply of those things and encourage the child to get them for him or herself.

3. **Use any Medicines as Prescribed for an Attack.** Different types of medicine used for attacks. Be sure that you understand how to use whatever medicines your doctor prescribes. Call your doctor if you realize that you need clarification on certain points. (Be sure and read the sections on WHIFFERS, PUFFERS, etc... and MEDICATIONS FOR ASTHMA.)

Taking Responsibility for Managing an Attack

Management steps #1 and #2 are things that children can do themselves. It is important that children are taught that resting and drinking liquids are things that they can do on their own to help themselves.

Depending upon the age of the child, set up some agreements in your family as to when the child should let you know about his or her breathing difficulty. With an older child, it may be the child's responsibility to take the first two steps, then let you know if no improvement in breathing has been noted after 15 minutes. If the child is very young, you many instruct the child to let you know as soon as he/she realizes there are breathing problems. Then you can provide such prompts as, "I'm glad that you came and told me that you're having a little trouble breathing. What can you do to help your breathing get better?" If the child suggests warm water, or resting, give praise for the child's remembering. Then be sure that the child takes his or her own advice. If the child has forgotten what to do, then remind him or her about the steps and help (but do not do it all yourself) the child take those steps.

And what if the preceding steps don't work? That may happen for a variety of reasons. Later, after the attack is under control, analyze why the attack got worse. Was there anything that you or your child could have done differently that may have kept the attack from worsening? Sometimes you may be able to plan new strategies for dealing with attacks in the future. Sometimes there may not be anything that you or your child could have done differently to gain control of the attack.

When to Call the Doctor

Parents are sometimes reluctant to call the doctor because they don't want to be a "bother." If the child seems to be having a serious asthma attack, some important points to remember are:

Breath is life. It is nothing to fool around with. If you have any doubts about the severity of an attack, get medical help first. Then ask if you should have brought the child in or should have waited. In this way, you can learn to better judge those things for yourself in the future.

If the child's lips or fingernails are turning blue or if he or she seems to be breathing shallowly and focusing all attention on breathing, get help. You cannot always hear wheezing during a serious attack, so don't rely upon that as a sign. If a child is in trouble and nothing is done to relieve bronchoconstriction, or nothing relieves it, the child will go into **status asthmaticus.** This is a serious attack where conventional asthma treatments do not help. It requires specialized care and attention.

If in doubt, call. Don't wait until the last minute to call. A phone call to your doctor costs next to nothing and could prevent a great deal of worry.

Asthma medications take a varying amount of time to work depending upon the specific kind. Ask your doctor to give you some guidelines about the particular medication that your child is taking. How soon after your child takes the medication should you begin to see it take effect? If it doesn't seem to be taking effect, how long before you can give more?

SUMMARY OF ASTHMA ATTACK **MANAGEMENT** AND **CONTROL**

I. BE AWARE
II. BEWARE
III. CAUTION
IV. DANGER

I. BE AWARE

Between Attacks

Your child can help prevent attacks by:

- Avoiding known asthma triggers such as allergens, irritants like cigarette smoke, infections, weather, emotions, etc. as much as possible.
- Praticing breathing exercises.
- Knowing his/her limits for physical activities.
- Drinking plenty of liquids, preferably warm.
- Taking medication as prescribed by the physician.
- Following good general health practices: getting adequate sleep, eating properly, exercising regularly.

You and your child can prevent future attacks from becoming serious by:

- Analyzing the management of previous attacks.

  What corrective measures worked? What corrective measures didn't work?

- This set of handouts can be fashioned into pocket-sized cards that serve as carry-around reminders of key attack prevention and management steps. Simply cut them out and fold on the dotted line.

II. BEWARE

of Early Warning Indicators

Your child can prevent an oncoming attack from getting worse by:

- Recognizing early warning indicators:

  Physical Symptoms such as: coughing, tightness in chest, decreased exercise tolerance, feeling tired, itchy throat, watery eyes, feverish, dry mouth, clammy skin, facial color change, sore throat, scratchy throat, heart beats faster, head plugged up, stroking of chin or throat.

  Emotional Symptoms such as: feeling spacey, getting upset easily, feeling nervous, feeling grumpy, feeling restless.
- Following attack management steps—resting and drinking liquids (preferably warm) if early warning indicators are experienced.
- Remembering that most attacks come on gradually and the measures taken early may be very helpful in preventing a full-blown attack.
- Using belly breathing and progressive muscle relaxation to help to gain control.

III. CAUTION

During An Attack

Your child can reduce the severity of breathing problems by:

- Continuing to rest and relax.
- Using belly breathing and progressive muscle relaxation if they help.
- Taking medication prescribed for attacks.
- Continuing to drink plenty of liquids, preferably warm liquids.

IV. DANGER

When Management Steps Bring No Relief

You and your child should:

- Recognize the signs of a severe attack: such as flared nostrils, hands over head, blue lips and/or fingernails, perspiration, raised shoulders, breathing from the neck up.
- SEEK MEDICAL ATTENTION RIGHT AWAY. Your child may go into status asthmaticus, a serious attack requiring specialized care. When conventional asthma treatments DO NOT HELP, immediate medical attention is needed.

ADULT ATTITUDE SURVEY

Name ______________________________

Date ______________________________

Administrator ______________________

Directions

Please answer every question, even though it may be difficult in some cases. Put a check beneath how you feel about each statement. Remember, please be as honest as possible and answer every question.

	STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE
1. My observations of my child's asthma are important in helping to get the asthma under control.					
2. Missing a dose of medication won't hurt.					
3. My child needs to be watched over almost all the time.					
4. My child can do a lot to control his/her asthma.					
5. My child's like most other kids except he/she has asthma.					
6. It's hard for me to ask my doctor questions about asthma.					
7. It's important to take asthma medicine on time.					

	STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE
8. My child's observations about his/her asthma are important in getting it under control.					
9. The way I raise my child has little influence on his/her asthma.					
10. Because of asthma, my child has to be more responsible than other kids his/her age.					
11. My child's asthma is under control.					
12. There is nothing my child can do to relieve an asthma attack before it gets bad.					
13. Eating properly can help my child's asthma.					
14. My child makes his/her asthma worse than it really is.					

	STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE
15. People with asthma can be successful.					
16. My child's asthma is not affected by my attitude toward it.					
17. The more I know about asthma, the better I can help my child.					
18. My child can't do well in school because of asthma.					
19. Children with asthma should be disciplined pretty much like other children.					
20. The more medication my child could take, the better off he/she'd be.					
21. I try to be as calm as I can during my child's asthma attack.					
22. My child uses asthma to get out of things.					
23. I cannot help my child in any way when he/she is having an asthma attack.					
24. Adults don't like my child because of asthma.					

HAVE YOU ANSWERED ALL THE QUESTIONS?

ASTHMA INFORMATION QUIZ

Name ________________________________

Date ________________________________

True/False: Place a T for true and an F for false in the space provided.

______ 1. Coughing is frequently a symptom of asthma.
______ 2. At present, there is no cure for asthma.
______ 3. Swimming is good exercise for those with asthma.
______ 4. Certain medications taken before exercise can help prevent an attack.
______ 5. Asthma medications have no side effects.
______ 6. Becoming emotional may cause an asthma attack to worsen.
______ 7. Children with asthma should be disciplined differently from other children.
______ 8. Almost everyone with asthma needs psychological help.
______ 9. There are usually other physical symptoms before wheezing is heard.
______ 10. Children with allergies to animals usually build up immunities to their own pets.
______ 11. Children learn their limits of physical activities by having their parents make them stop before they get sick.
______ 12. Too much praise makes a child demanding.

Circle the correct word(s) in each statement.

1. During an asthma attack, air gets trapped (INSIDE OUTSIDE) the lungs.
2. A severe attack rarely comes on (WITH WITHOUT) warning.
3. It appears that the occasional short-term use of steroids (DOES DOES NOT) have serious, immediate side effects.
4. Laughing (CAN CANNOT) be a cause of asthma attack.

Choose **as many phrases as are correct** in each of the following items. There may be several for each item.

1. Status asthmaticus:
   a. The condition of having asthma
   b. A steadily worsening state of asthma
   c. An improving state of asthma
   d. Usually preventable
2. A bronchodilator is:
   a. A machine used in the hospital to force air into the bronchial tubes
   b. Any medicine that is prescribed for asthma
   c. Any medicine that helps open the bronchial tubes
   d. Any bronchial medicine that can be used in an aerosol form
3. The changes that take place in the lungs during an asthma attack include:
   a. Swelling of tissues in the bronchial tubes
   b. Production of extra mucus
   c. Narrowing of the bronchial tubes
   d. Drying of the mucous membranes

4. Important treatment steps to follow during an asthma attack include:
   a. Immediately calling a physician
   b. Drinking fluids
   c. Continuing or beginning vigorous activity
   d. Resting
5. Allergy shots:
   a. And immunotherapy are the same thing
   b. Always help someone with asthma
   c. Gradually desensitize the body to what one is allergic
   d. Contain medicine that fights the allergy
6. The best way to teach a child to take medicine on time is:
   a. Remind the child right before it is time
   b. Punish the child when he/she forgets
   c. Praise the child when he/she remembers
   d. Praise the child when he/she remembers and warn the child not to forget the next time
7. Using more bronchodilator spray (neb) than is prescribed:
   a. Cannot be harmful
   b. May mean that other medications need to be changed
   c. May mean that the asthma is not under control
   d. May worsen an asthma attack
8. Theophylline is an asthma medicine:
   a. Whose side effects are similar to steroids
   b. The amount of which can be measured in the blood
   c. That can be affected by smoking
   d. That is the primary one used in the United States

PARENTS' SESSION TWO

MEDICATION MANAGEMENT OF ASTHMA

GOALS

- To explain the nature of medications prescribed for asthma.
- To discuss common asthma medications and issues related to their use.

RESOURCES

Leader Background Material:
  Asthma Drug Information Sheets
  Asthma Drug Names
  Common Questions About Asthma Medicines
  Asthma Drug Vocabulary
  Asking Questions About Medications
  Helpful Facts About Medications for Asthma
  Inhaled Bronchodilators: Whiffers, Puffers, Inhalers, Breathers, Nebulizers

Equipment:
  Blackboard and chalk, or flipchart and marking pen

Handouts:
  Common Questions About Asthma Medicines
  Asthma Drug Vocabulary
  Asking Questions About Medications
  Helpful Facts About Medications for Asthma
  Inhaled Bronchodilators: Whiffers, Puffers, Inhalers, Breathers, Nebulizers
  Learning Behavior

ACTIVITY LIST

Topic/Activity	Leader Background	Handouts
Welcome		
Patterns of Taking Medicine for Asthma		
Associating Brand Names with Classes of Asthma Drugs	Asthma Drug Information Sheets Asthma Drug Names	
How Asthma Drugs Work		
Group Discussion of Asthma Medications		Common Questions about Asthma Drugs Asthma Drug Vocabulary Asking Questions about Medications Helpful Hints about Medications for Asthma Inhaled Bronchodilators
Questions for Guest Professional		
Assignment		Learning Behavior

PARENT'S SESSION TWO

MEDICATION MANAGEMENT OF ASTHMA—TEACHING NOTES

Orientation for the Leader

Session 2 gives parents a thorough overview of basic information about asthma drugs. Much of the information is scripted into the teaching notes, but, again, as in session 1, the leader may present as much or as little as the group's needs and attention will allow.

Integral to the session is a guest physician or pharmacist to answer specific questions from participants. The guest professional may also wish to present the basic information about asthma drugs, so be sure to ask his/her preferences.

A number of optional group exercises give parents the opportunity to see the legitimate variety in prescribing patterns for asthma drugs and to learn to associate the brand names of their children's medicines with the broad classes and generic types of asthma drugs that are available. This last exercise helps parents understand how the USP information sheets relate to the drugs their children are taking. It may be omitted if the sheets are not given as handouts or may be shortened if only a few drugs are being used by the children in the program.

Some of the information may be conveyed through a discussion mechanism in which the leader asks questions of the group and corrects any misinformation they may already have.

In addition to basic information, parents should also come to understand a number of concepts related to self-management:

1. The importance of the child and the family knowing the exact names of the asthma medicines that are prescribed and the times they should be taken.
2. The concept of therapeutic level.
3. The importance of taking daily asthma medicines on time.
4. Being aware of the side effects of asthma medicines.
5. Realizing that the side effects of the medications can affect the behavior and physical condition of the child.
6. Knowing that medications can be taken before exercise or before exposure to allergens to prevent attacks and to allow the child to participate in more activities.
7. Being aware of the pros and cons of children using nebulized bronchodilators.
8. Finding ways to avoid overuse of nebulized bronchodilators, if this is a problem:
    a. not allowing the child to carry the nebulizer
    b. informing the child about the bronchoconstriction that can occur if the inhaled bronchodilator is over used
    c. helping the child not to panic during an attack so he/she will avoid the urgency to use and reuse the nebulized medication.

These points may be stressed during the discussions in response to parents' comments.

Not all children may use nebulized bronchodilators (nebs for short) and families that do use them may not find them a problem. If nebs are not an issue with the group, then it may be omitted or treated only briefly.

A number of handouts are also available for parents. These include helpful facts and hints about asthma medicines, a guidesheet for asking the family physician questions about the medications, and common questions and answers about asthma medicines. These may be distributed as information sheets or built into session activities with class interactions engineered by the group leader.

Welcome

As you learned in the last session, asthma cannot be cured, but it can be controlled.

Your doctor can prescribe medications and advise on other therapeutic practices to help control your child's asthma. However, the success of these medical prescriptions depends on your child actually taking the medicines as prescribed and actually following the practices that are advised.

Compliance in these areas, as many of you know, is easier said than done. Compliance with taking medicine, that is taking the medicines on time and in the correct manner, may be troublesome for the child with asthma.

Knowing how the medicines work and knowing why they must be taken on time will help in the motivation for complying with the medicine schedule. This knowledge will help you and your child become better managers for asthma control.

Patterns of Medicine Taking for Asthma: Medication Awareness Exercise

optional exercise

All of you, hopefully, have come prepared with the names of the asthma medicines your children are currently taking. Let's share this information with the group.

Mrs.____________________, what asthma medicines does your child take?

Mr.____________________, what does____________(name of child) take?

Does____________________(name of child) take any inhaled medications?

Continue around the room asking each adult participant. Write the name of the medicines on the flipchart or blackboard as they are mentioned. As you continue, write only those names that have not been mentioned. If a previously cited brand name is given, put a small check next to the name each time. This will give a picture of which drugs are most commonly used.

If possible, as you write the brand names on the board, have space for four categories and place together all the names corresponding to the xanthine category, the adrenergic bronchodilator category, the cromolyn category, and the steroid category. Consult the brand name list in the leader background for reference. For the adrenergics and the steroids, subdivide each list into two parts, one for oral/injected dosage forms and one for inhaled forms.

OK, now let's see how your children use these medicines. Raise your hand if your child uses an asthma medicine in any of the following ways:

1. Asthma medicine is taken everyday.
2. Asthma medicine is taken only as needed and *not* on a regular basis.
3. Medicine is taken by inhalation.
4. Medicine is taken by mouth.
5. Medicine is taken before exercise.

6. Medicine is taken every 4 hours.
7. Medicine is taken every 6 hours.
8. Medicine is taken every 8 hours.
9. Medicine is taken every 12 hours.

Do any of your children get allergy shots? Raise your hands if they do.

Wait for a show of hands after each statement. Write "everyday, as needed, inhalation, oral, before exercise," and "allergy shots" on the board. Record the number of hands raised for each item.

Are there any other ways or reasons for taking asthma medicines that have been prescribed for your child?

Allow short time for responses. Allow some discussion of similarities and differences in experiences with asthma medications.

summary

Let's close this discussion by summarizing what we have just observed:

1. There are many different medicines that are prescribed for asthma.
2. Sometimes generic and sometimes brand names are prescribed.
3. There are many different schedules and reasons for taking asthma medications.

The differences you see in asthma medication practices should not be a cause for concern. Instead they arise because of three principals related to the medical management of asthma.

1. Medications do not cure asthma; they simply control it.

   Medicines help control the hypersensitive airways and the effects last only as long as they are being taken. If the medicine is not being taken, the control is not maintained.

2. To control the asthma, the medicine must be present in the blood in a certain level; this is known as the "therapeutic level" of a drug.

   To maintain this level, daily asthma medications must be taken on time.

3. Medication therapy must be tailored to the needs of the child.

   The severity of asthma differs in each child. Therefore, some children with severe asthma require daily use of medicines while other children with mild asthma may only use medicine on an as needed basis. Also children respond to medicines in different ways. What may be good for one child may not be acceptable for another.

4. The severity of asthma may change unpredictably with time.

   Therefore, the need for drugs may change and the medicine therapy must be reexamined at regular intervals to see if it is still appropriate.

Associating Brand Names with Classes of Asthma Drugs

asthma drug classes

So far we have encountered many brand names of asthma drugs. However, there are really only four major classes of drugs for asthma:

1. Xanthines
2. Adrenergic Bronchodilators
3. Cromolyn
4. Steroids.

Each class includes several different compounds that are each called by a generic name to simplify matters. For each generic name, there are many corresponding brand names, and each brand may be available in several different dosage forms. Different dosage forms such as capsules, liquids, and time release forms may show differences in the rate at which the drug is absorbed and used by the body.

All the drugs in each class have similar ways of acting and share many things, such as common types of side effects. However, each generic drug is chemically different and may have slight differences in side effects, dosing forms, and special effects.

Let's go back to our list of your children's asthma drugs on the board and see if we can classify these familiar brand names into major classes and the generic types that belong to each class.

All these in the first column belong to the xanthine group. All in the second column belong to the adrenergic bronchodilator group. The one in the third column is cromolyn, and these in the fourth column are steroids.

Now let's go over each brand you listed and see what generic types are represented.

optional handout

If using the USPC asthma drug information sheets, distribute all six titles to each family represented in the parents' group.

These information sheets give useful patient information about asthma drugs, including precautions to use when taking the medicines, things to tell the doctor to avoid drug interactions, which side effects require medical attention, and which side effects do not.

However, to have this information make sense, you have to know how the brand names of the medicines your children are taking fit into the broad categories and generic types that are summarized in these sheets.

Ok, the first brand listed ____________________(name) is a ____________________ . (theophylline, aminophylline, diphylline, ____________________) There are three other generic types in this class. They are ____________________ (give the three not associated with the first cited brand name.) Let's go over the other brands in our list. The next name ______________ is a ______________ .

Continue down the list on the board, in the same fashion, if participants are interested. Consult the Asthma Drug Names list in the leader background material to find answers.

associating brand names with generic names in the six broad categories of asthma drugs

Ok, the first brand given in the second group is a trade name for ______________ . There are other generic types in this group. They are listed at the top of the drug handout sheet for Adrenergic Bronchodilators (Oral/Injection). They have many different brand names.

Some of the adrenergics are also available in inhaled forms. We put them in a separate column under the adrenergics.

The generic types that come this way are listed at the top of the information sheet marked Adrenergic Bronchodilators (Inhalation). You will notice many of the same generic types. However, the proper use of the medicines, the precautions, and some of the patient considerations are different for inhaled bronchodilators when compared to the oral forms of the same drugs.

Intal is the only brand available in the U.S. for cromolyn.

The first brand in the fourth group is a name for the steroid ____________ . There are other generic types of steroids. These types are known as ____________ , ____________ , ____________ , ____________ , and have brand names such as ____________ , ____________ , ____________ , and ____________ .

They are listed at the top of the drug information sheet marked Adrenocorticoids (Oral). Adrenocorticoids is the medical term for steroids.

Certain steroids are used by asthma patients in an inhaled form. These steroids include the generic types beclomethasone and dexamethasone. We listed their brand names in a separate section of the steroid group.

The generic steroids that come in inhaled forms are listed at the top of the information sheet marked Adrenocorticoids (Inhalation).

How Asthma Drugs Work

This is a brief review of the main classes of asthma drugs and some of the self-management information that is important for each class.

Xanthines

mode of action

The xanthines are believed to reverse airway obstruction by increasing the amount of a chemical in smooth muscle cells called cyclic AMP. Cyclic AMP relaxes the smooth muscles in the airways and thereby allows the air passages to open up or dilate. For this reason, the xanthines are called bronchodilator drugs.

generic types

Four generic types of drugs belong to the xanthine class. One is theophylline, a very common xanthine drug. Over 55 brand names of theophylline are available. The other three generic types in the xanthine group are aminophylline, dyphylline, and oxtriphyllin. There are over 20 brand names that cover the other three generic types in the xanthine group. (Consult the Asthma Drug Names list for specifics.)

combinations

Theophylline is sometimes combined with other antiasthma medications. These combination medications are available under a variety of brand names.

dosage forms

Theophylline and other xanthines are usually given by mouth. The medical term for this is "taken orally." However, in severe attacks a xanthine may be given intravenously. Xanthines can also be given rectally in the form of an enema. Although aminophylline suppositories are available, they are not recommended for children.

concept of therapeutic level

In order for a drug to work effectively to keep the airways open, and to protect against an asthma attack, it must be present in a certain level in the blood. This is known as the "therapeutic level." If the amount is lower than the therapeutic level, the drug becomes less effective. If the amount is higher than the therapeutic level, side effects are more likely to occur.

checking blood levels

The effectiveness of theophyllines and other xanthines is related to the level in the blood. Therefore, the doctor may take occasional blood samples from the patient to check the amount of theophylline in the blood. The dose can then be adjusted if the blood amount is too high or too low.

regular doses needed

In most children, the effectiveness of theophylline or other xanthines lasts from 4 to 8 hours. Therefore, the drug has to be taken several times a day at regular intervals in order to control the asthma. Since children metabolize the drug faster than do adults, taking the medicine on time is important. Special long-acting forms are available that may make it necessary to take the drug fewer times each day.

side effects

Fortunately, theophyllines and other xanthines do not appear to lose their effectiveness with long-term use and do not have serious long-term side effects. However, there are acute side effects that can be produced when the dosage is too high. These involve the stomach and the nervous system. The effects on the stomach include nausea, vomiting, loss of appetite, and stomach aches. The effects on the nervous system include irritability, dizziness, and changes in personality. When any of these symptoms occur, side effects from the xanthine drugs should be suspected. Xanthines also tend to irritate the stomach and intestines.

Some preparations containing xanthines have a high alcohol content, and young children may experience side effects from the alcohol ingredient. Therefore, it is a good idea to check the ingredient list.

In most children, doses of theophylline-like drugs can be adjusted so control of asthma can be obtained without having unacceptable side effects.

interactions

Erythromycin or troleandromycin may cause the blood level of theophylline-like drugs to increase. Cimetidine, a drug used to treat ulcers, also acts to increase the blood-level of xanthines. In contrast, smoking causes the blood level of theophylline to *decrease* at a faster than normal rate.

self-management

Some important points to remember when using theophylline or other xanthines for asthma:

1. The medicine should be taken exactly as prescribed, which is usually at equally spaced intervals spread over a 24-hour period.
2. Theophyllines and other regularly prescribed xanthines should be taken even when the child is feeling well so the blood levels of the drug can be kept in the therapeutic range at all times.
3. Side effects should be reported to the doctor so he/she can regulate the dosage to minimize or avoid side effects.
4. If irritation to the stomach or intestines occurs, it may be minimized by taking theophylline or other xanthine drugs with milk, crackers, or other foods.
5. Check with the doctor if your child smokes or is taking certain antibiotics. Under these conditions, the blood level of theophylline-like drugs may increase or decrease at a faster than normal rate and the dose may need to be adjusted to keep the blood levels in the therapeutic range.

Adrenergic Bronchodilators

mode of action

Adrenergic drugs are also bronchodilators. They work to relax and open the airways by acting on tiny parts of nerve cells called receptor sites. These sites are part of the involuntary "adrenergic" nervous system, the term that gives this class of drugs their name.

There are three main types of receptors. They are called alpha, beta-1, and beta-2 receptors. These receptor sites are located in the airways, but they are also found in other parts of the body as well, including inside the heart muscle and muscles in the arms and legs.

Some adrenergic drugs act on all three types of receptors, but some types of adrenergics are more selective and predominantly influence only one or two types of receptors. It is thought that the most effective bronchodilator drugs are the ones that primarily influence the beta-2 receptors. These drugs cause fewer side effects than the ones that act on only two or all three type of receptors.

"Sympathomimetic" is another name for "adrenergic," and sometimes the adrenergic drugs are called the sympathomimetic bronchodilator drugs.

generic names

The adrenergic bronchodilator drugs include several different type of medicines. Their generic names are known as albuterol, ephedrine, epinephrine, ethynorephinephrine, isoetharine, isoproterenol, isoproterenol with phenylephrine, metaproterenol, and terbutaline. Each is known by one or more brand names. Some are taken by mouth or given by a doctor by injection. Some are also available as inhaled forms.

examples

Epinephrine is an example of an adrenergic drug that acts on all three types of adrenergic receptors. It is one of the most powerful bronchodilator drugs. However, its use is limited by the fact that it is not effective if taken by mouth. Therefore, it must be given by injection or by inhalation. In addition, epinephrine acts only for a short time, usually not more than one hour. For these reasons, epinephrine has no place in the everyday treatment of asthma and is reserved for emergency use to treat acute attacks.

Epinephrine is also known as adrenalin. Its side effects include increased heart rate, blanching of the skin, headache, nervousness, and sometimes nausea and vomiting. These side effects usually do not last for more than 15 or 20 minutes. Because of these problems, epinephrine injections are generally not given closer than 20 minutes apart.

examples

Isoproterenol is an example of an adrenergic drug that influences primarily beta-1 and beta-2 receptors.

Isoproterenol is usually given by inhalation. An effective way to give this drug is by an air compressor unit that creates a mist to be inhaled. Small, pocket-sized nebulizers are also available and are convenient to use when the patient is away from home.

However, the portable nebulizers are easy to overuse. This may create a potentially dangerous situation because *overuse* of certain inhaled adrenergic bronchodilators can lead to *constriction* of the bronchial tubes and to a worsening of the asthma attack. This is known as paradoxical bronchoconstriction.

If your child carries a portable nebulizer containing isoproterenol, metaproterenol, or other adrenergic bronchodilator drugs, it is important for parents to keep track of how often the nebulizer is being used. Other adrenergic bronchodilator drugs that come in inhaled forms include albuterol, isoetharine, and epinephrine.

Isoproterenol is similar to epinephrine in its side effects.

Examples of adrenergic bronchodilator drugs that influence primarily beta-2 receptors include metaproterenol, terbutaline, isoetharine, and albuterol.

self-management

Some important points to remember when using adrenergic bronchodilator drugs:

1. The correct use and cleaning of the metered-dose inhaler are important.
   Be sure the child knows how to use the nebulizer or metered dose inhaler correctly. Ask the doctor to demonstrate the correct use if the child is uncertain.
2. Do not overuse inhaled adrenergic bronchodilators during an attack.
   Too much could cause a tightening of the bronchial tubes. Be sure that your child does not use these medications more than the amounts and times stated in the package directions.

Cromolyn Sodium

mode of action

Cromolyn does not dilate the bronchial tubes. Instead it works to prevent asthma attacks by inhibiting the production/release of body substances that create allergic reactions in the lungs. In some individuals, asthma attacks occur because of allergic reactions in the lungs. Cromolyn acts to lessen the response of the lung to allergic triggers.

Therefore, cromolyn is used to *prevent* bronchoconstriction but *cannot treat* or reverse bronchoconstriction once it has occurred. Cromolyn is useful only when taken regularly to prevent attacks. It has no effect after wheezing starts. Cromolyn is not a bronchodilator.

Cromolyn is taken by an inhaler. It can be taken as a dry powder or as a solution. Special equipment is needed to administer cromolyn, and it is sometimes cumbersome to take this drug.

In some children, inhalation of the powder provokes coughing which can aggravate asthma. In addition, for unknown reasons, some children respond very well to cromolyn while for others the drug has no effect in controlling the asthma.

However, the response to cromolyn takes time to show up. Often a person must take cromolyn regularly for 1 or 2 months before any effect is seen. If no benefit is experienced in about 3 months, then it may be assumed that the person just is not responding to the cromolyn.

self-management

Some important points to remember about the use of cromolyn:

1. Cromolyn should not be used during an asthma attack.
2. Correct use and cleaning of the inhaler equipment is important.
3. Cromolyn must be taken regularly for 1 or 2 months before the effects may show up.

Adrenocorticoids

mode of action

Steroids decrease inflammation and thereby work to reduce swelling and allergic reactions in the lungs. Steroids are also believed to increase slightly the production of cyclic AMP which acts to dilate the bronchial tubes through the relaxation of bronchial smooth muscle.

examples

The group of drugs known as steroids are all related to cortisol, the hormone that is produced by the "cortex" or center of the adrenal gland. Therefore, this class of drugs is often called the "adrenocorticoids" or the "corticosteroids." Cortisone was the first synthetic corticosteroid. Its structure is very closely related to cortisol and is readily converted in the body to cortisol. In addition to cortisone, a number of other closely related synthetic compounds are also used including prednisone, prednisolone, methylprednisolone, dexamethasone, and triamcinolone. They are known by a variety of brand names.

The steroid hormones are strong asthma drugs. However, their potential for causing side effects limits their long-term use.

side effects

It is important to remember that the side effects which arise with steroid treatment depend very much on the level of the dose and on how long the steroids are taken. Major side effects, such as growth suppression, take months to develop. Therefore, treatment for a few days or a few weeks to help a child over an acute flare-up is a safe procedure that rarely causes problems. Other side effects, such as the tendency to gain weight, disappear when the steroids are stopped.

When steroids must be used on a regular basis, the chance for developing side effects is greatest when the drug is taken several times a day and less if the entire dose is taken once a day, preferably, in the morning. The incidence of side effects can often be reduced still further if steroids are given every other day. Many children are able to take alternate day steroids for long periods of time with no serious side effects.

There are many side effects of steroids. Three of most concern for children are especially associated with long-term use and with the higher doses that are taken by mouth.

1. Changes in body shape.

   Steroids often stimulate appetite so weight gain is common. They also change the normal distribution of body fat, shifting it to the face and trunk, so that a round-faced, round-bodied look develops. This effect is reversible when the drug is reduced or stopped.

2. Reduced growth rate.

   Prolonged use of steroids can interfere with the growth rate of the long bones of the body and thus can affect the growth rate of a child who takes oral steroids for a long period of time. However, even after long periods of suppression by steroids, growth usually resumes when steroids are reduced or stopped.

3. Adrenal suppression

   The adrenal glands are the body's natural source of cortisol. When cortisol-like drugs are given for extended periods of time, the adrenals may become "lazy" and stop their own production of cortisol. If the drug is discontinued abruptly after a long period of treatment, it takes time for the adrenals to begin to function again. During this interim period, a person may have trouble handling stressful situations because their natural supply of corticosteroids is very low. To avoid this problem, people who are discontinuing steroids will be prescribed gradually decreasing doses at the end of their treatment period. This gives the adrenal glands time to renew their production of cortisol.

Inhaled Steroids

effect

In recent years, several types of steroids have been made available in inhaled forms. These are sprayed directly into the lungs where they exert most of their action. This means of delivery puts the drug exactly where it is going to work and avoids many of the side effects that occur when steroids are taken by mouth. Oral steroids enter the body through the digestive system which then admits the drug to the bloodstream which then carries the steroids to various parts of the body in addition to the lungs. Therefore oral steroids reach and affect many parts of the body and can cause more side effects than the inhaled steroids.

The inhaled steroids are sometimes difficult to use for small children, and long-term use may irritate the throat. Also inhaled steroids are not meant to be used to treat severe, acute attacks.

self-management

Some considerations for the use of steroids in asthma management:

For inhaled steroids:

1. To prevent getting fungal infections in the mouth, gargle with water after each use.

2. If white patches, a sign of fungal infection, do appear on the tongue, consult a doctor. He/she can prescribe an antifungal medication.
3. Inhaled steroids should not be used during an attack. This may only make the attack worse.
4. Cleaning and correct use of the metered dose inhaler is important.

For oral steroids:

1. Use of oral steroids should not be stopped all of a sudden. Instead, the dose should be tapered off gradually. The doctor will prescribe the proper decreases in dose when it is time to stop, but a patient should not stop abruptly by himself/herself.
2. Also, when a patient switches from an oral steroid to an inhaled steroid, the process should be gradual.
3. The doctor should be informed of any side effects.

Group Discussion Of Asthma Medications

Allow time for some discussion of issues about asthma medicines. The following list of leading questions covers the major topics and issues that were commonly of interest to parents in the original Living with Asthma program. Be sure, also, to stress the information related to self-management, such as the reason for taking medications on time and the definition of the term "medication compliance." Answers to some of the questions can be found in the leader background; many others will come from the experience of the group.

However, remind the group that most discussion should be reserved for the end of the session, after the presentation of basic information and the question and answer period with the guest physician. Some of the leading questions may also be posed to the guest professional.

how asthma medicines work

Do you understand how the different asthma drugs work?

Do you understand exactly when and how your child should take his/her asthma medicines?

Do you know how long you have to wait before each medicine takes effect?

Do you understand what a bronchodilator drug is?

Can you describe how it is different from the inhaled steroids or cromolyn?

optional handouts

Distribute the handouts Asking Questions about Medications, Helpful Facts about Medications for Asthma, Common Questions about Asthma Medicines, and Asthma Drug Vocabulary.

side effects

Are you aware of the common side effects of your asthma medications?

Have you noticed any side effects from your child's medications?

Are you concerned about any side effects in particular?

How have you handled problems you have had with side effects from asthma medicines?

terms related to self-management

Do you know what is meant by medication compliance?

Wait for brief answers. Then explain.

Medication compliance means doing exactly what the doctor has prescribed in terms of taking the medicines. This includes taking the medicine at the correct time, in the correct amount, and in the correct manner.

How much leeway is considered "on time" for taking asthma medications?

Wait for brief answers. Then explain.

For theophylline, half an hour on either side of the scheduled time is on time. Anything more or less is not. Consult the asthma drug information sheets for specific instructions on what to do if you miss a dose of other types of asthma drugs.

Stress the importance of taking asthma drugs on time.

What is your understanding of a "therapeutic level" of a drug?

A "therapeutic level" is the concentration of drug in the bloodstream that is most effective for controlling the asthma. If the amount of drug drops below that level, it is less effective and the person is not as well protected against attacks. If the amount is higher than the therapeutic level, side effect [illegible] more likely to occur.

Do you know why it is important to take asthma drugs on time?

Taking asthma drugs on time keeps the blood levels fairly constant and within the therapeutic range. This helps to stave off or avoid attacks.

Do you know what a theophylline level is?

A theophylline level refers to the concentration of theophylline in the blood. It is determined on a sample of blood taken from the arm.

inhaled bronchodilators

If only a few or no participants' children use inhaled bronchodilators, then keep the discussion of this topic short. However, if use of these medications is a problem, as it may be for teenagers, then allow the discussion to proceed and to cover the items in the handout titled Inhaled Bronchodilators: Whiffers, Puffers, Inhalers, Breathers, Nebulizers.

Do any of your children use inhaled bronchodilators?

Were you satisfied with the way they worked?

How do you feel about your child using them?

Have you ever had problems with these medications?

Are you aware of the pros and cons of using inhaled bronchodilators?

Is your child allowed to carry an aerosol bronchodilator?

medications as pretreatment before activities

Do any of your children take medication before exercising or sports activities?

Do any of your children have drugs to take before they engage in an activity in which they would be exposed to allergens?

Is exercise a problem for any of your children?

Are you aware that doctors can prescribe medications to be taken before exercise to help children participate more fully in activities without having asthma problems?

skin tests and allergy shots

Does your child receive allergy shots?

What has been your experience with allergy shots in relation to asthma?

Allergy shots help some people with asthma but not others.

Has your child ever been skin tested for allergies?

What was your experience with allergy skin testing.

Did the skin tests identify all your child's allergies or only some of them?

What allergies did you discover on your own?

What allergic triggers did you discover on your own?

Do all of the positive skin test items cause asthma for your child? Do only some of them cause asthma? Do none of them cause asthma?

Questions For The Guest Professional

introduction of guest

This last half of the session will be devoted to a question and answer period about asthma medicines. We are fortunate to have as our guest Dr. ______________ of ______________ (or Mr./Ms. ______________, a registered pharmacist) to answer your specific questions.
I will now turn the session over to ______________.
Please ask your questions directly of ______________.

question period

Allow time for questions from participants.

Sometimes you may have to rephrase a question or ask for clarification if it is not clear what the person is asking. If one person dominates or asks a detailed question that is very specific to a personal case, you may ask that person to consult his/her own physician.

closing the question and answer period

We learned a lot today from ______________.
Thank you very much for coming.

Assignment

Distribute Learning Behavior, social learning theory handout.

Next week we will talk about the behavioral aspects of asthma management. This background reading will help you to understand some of the concepts we will discuss.

Again, thank you for coming and we also thank ______________ our guest, for coming to answer questions.

See you next week!

ASTHMA DRUG INFORMATION SHEETS

To update the drug information written for the original 1977 version of Living with Asthma, the United States Pharmacopeial Convention (USPC) has created a special series of asthma drug information sheets which may be found on the following pages. The USPC is an independent, nonprofit organization that sets the official standards for strength, quality, purity, packaging, and labeling of medical products in the United States.

The drug information sheets are important background reading for the teacher. Each sheet covers a single generic type or a closely related group of asthma drugs. Written in easy-to-understand language, each covers proper use of the medicine, precautions to take, side effects, and interactions with other drugs. The information was compiled for adults and children who use asthma drugs. Therefore certain statements that pertain to the use of the drugs during pregnancy and lactation apply, obviously, to adults only. All information has been carefully reviewed by national expert committees assembled by the USPC and will be updated annually to include any new information that may be useful to patients.

These information sheets come in 5½- × 8½-inch pads containing 50 sheets each. The cost is normally $1.65 per pad, but volume discounts are available. Currently, there are six titles in the asthma series: (1) Adrenergic Bronchodilators (Oral/Injection); (2) Adrenergic Bronchodilators (Inhalation); (3) Adrenocorticoids (Oral); (4) Adrenocorticoids (Inhalation); (5) Cromolyn (Inhalation); and (6) Xanthine Derivatives (Oral).

The asthma drug information sheets may be obtained from:

Order Processing Department
The United States Pharmacopeial Convention
12601 Twinbrook Parkway
Rockville, Maryland 20852
Phone: (301) 881-0666

Using the Asthma Drug Information Sheets with the List of Asthma Drug Names

Drugs are complex substances, and they may have as many as three different names: chemical, generic, and brand. Chemical names are long and difficult to pronounce. The U.S. Adopted Names (U.S.A.N) Council approves the generic, shortened names by which drugs are usually known. Patented compounds are given brand names by the manufacturer. For example, 3,4-dihydroxy--[(isopropylamino)methyl]benzyl alcohol hydrochloride is the chemical name for isoproterenol, which is the generic name for Isuprel. Many nonprescription and prescription asthma drugs are available under both generic and brand names.

Most consumers are familiar with the brand names of the medications they take. Brand names that are mentioned during class discussion may be found in the third column of the list of Asthma Drug Names. The generic name and type of class of drug can then be determined and the appropriate USP Information sheet used to discuss particular drugs.

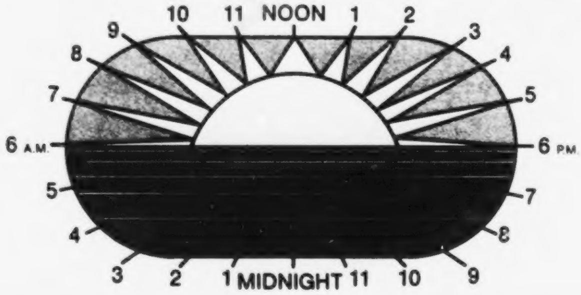
Class participants may ask why their doctor prescribes a brand-name drug rather than a generic drug. Generic products tend to be less expensive than brand-name drugs and usually are just as effective. Reputable pharmacies are careful to obtain high-quality generic products from respected manufacturers, so it is sometimes possible to make substitutions. However, because of differences in manufacturing methods, medicines with the same generic name produced by different companies may differ in the way they are absorbed by the body. For this reason, a doctor may prefer to prescribe a brand-name drug.

Adrenergic Bronchodilators (Oral/Injection)

Including Albuterol ☐; Ephedrine ☐; Epinephrine ☐; Ethylnorepinephrine ☐; Isoproterenol ☐; Metaproterenol ☐; and Terbutaline ☐.

Take ____________________

☐ At the time (s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only
☐ Only when needed but not more than ____________
☐ ____________
____



About Your Medicine

Adrenergic bronchodilators are given by mouth or by injection to treat the symptoms of bronchial asthma, chronic bronchitis, and emphysema. They relieve cough, wheezing, shortness of breath, and troubled breathing by increasing the flow of air through the bronchial tubes or air passages.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .

- are allergic to any medicine, either prescription or nonprescription (OTC);
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine, especially atenolol; metaprolol; monoamine oxidase (MAO) inhibitors (isocarboxazid, pargyline, phenelzine, or tranylcypromine); nadolol; other medicine (including oral inhalations) for asthma or breathing problems; pindolol; propranolol; timolol; or tricyclic antidepressants (medicine for depression);
- have any other medical problems, especially heart or blood vessel disease or high blood pressure.

Proper Use of This Medicine

Use this medicine only as directed. Do not use more of it and do not use it more often than your doctor ordered. To do so may increase the chance of side effects.

Adrenergic bronchodilators, especially ephedrine, may cause some people to have trouble in sleeping. To help prevent this, **take the last dose for each day a few hours before bedtime.**

For patients using epinephrine injection: Do not use if the solution turns pinkish to brownish in color or if it becomes cloudy.

If you are using this medicine regularly and you miss a dose, use it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses.

Precautions While Using This Medicine

If you still have trouble breathing after using this medicine, or if your condition gets worse, check with your doctor at once.

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Chest pain
- Irregular heartbeat

Possible signs of overdose

- Dizziness (severe)
- Headache (continuing or severe)
- Increase in blood pressure (severe)
- Nausea or vomiting (continuing or severe)
- Unusual nervousness or restlessness
- Unusually fast or pounding heartbeat (continuing)
- Weakness (severe)

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Dizziness or lightheadedness
- Headache
- Increase in blood pressure
- Nausea or vomiting
- Nervousness or restlessness
- Trembling
- Trouble in sleeping
- Unusual increase in sweating
- Unusually fast or pounding heartbeat
- Weakness

Metaproterenol may cause a bad taste in your mouth. This may be expected and will go away when you stop using this medicine.

Isoproterenol may cause the saliva to turn pinkish to red. This is to be expected while you are using the sublingual (under-the-tongue) form of this medicine.

Side effects are more likely to occur in elderly patients who are usually more sensitive to the effects of these medicines.

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

© 1985 The United States Pharmacopeial Convention, Inc. January 1985

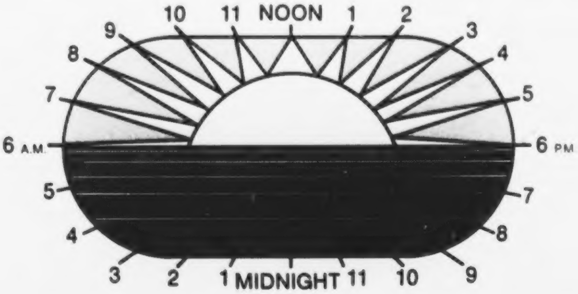
Adrenergic Bronchodilators (Aerosol Inhalation)

Including Albuterol ☐; Epinephrine ☐; Isoetharine ☐; Isoproterenol ☐; Isoproterenol and Phenylephrine ☐; and Metaproterenol ☐.

Take ____________________

☐ At the time (s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only

☐ Only when needed but not more than __________
☐ __________
____



About Your Medicine

Adrenergic bronchodilators are taken by oral inhalation to treat the symptoms of bronchial asthma, chronic bronchitis, and emphysema. They relieve cough, wheezing, shortness of breath, and troubled breathing by increasing the flow of air through the bronchial tubes or air passages.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .

- are allergic to any medicine, either prescription or nonprescription (OTC);
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine, especially atenolol; metaprolol; nadolol; other medicine (including oral inhalations) for asthma or breathing problems; pindolol; propranolol; timolol; or tricyclic antidepressants (medicine for depression);
- have any other medical problems, especially heart or blood vessel disease or high blood pressure.

Proper Use of This Medicine

Use this medicine only as directed. Do not use more of it and do not use it more often than recommended. To do so may increase the chance of side effects.

Some of these preparations may come with patient directions. Read them carefully before using this medicine.

Keep spray away from the eyes.

Do not take more than 2 inhalations of this medicine at any one time, unless otherwise directed by your doctor. Allow 1 to 2 minutes after the first inhalation to make certain that a second inhalation is necessary.

Save your applicator. Refill units may be available.

Store away from heat and direct sunlight. Do not puncture, break, or burn container.

If you are using this medicine regularly and you miss a dose, use it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses.

Precautions While Using This Medicine

If you still have trouble breathing after using this medicine, or if your condition gets worse, check with your doctor at once.

If you are also using an adrenocorticoid inhaler to help you breathe better, use it a few minutes after using this medicine, unless otherwise directed.

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Chest pain
- Irregular heartbeat

Possible signs of overdose

- Dizziness (severe)
- Headache (severe)
- Increase in blood pressure (severe)
- Nausea or vomiting (severe)
- Unusual nervousness or restlessness
- Unusually fast or pounding heartbeat (continuing)
- Weakness (severe)

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Dizziness or lightheadedness
- Dryness or irritation of mouth and throat
- Headache
- Nausea or vomiting
- Nervousness or restlessness
- Trembling
- Trouble in sleeping
- Unusual increase in sweating
- Unusually fast or pounding heartbeat
- Weakness

Isoproterenol or isoproterenol and phenylephrine combination may cause the saliva to turn pinkish to red. This is to be expected while you are using the inhalation form of this medicine.

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

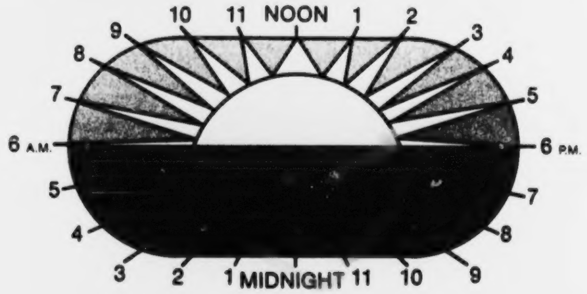
© 1985 The United States Pharmacopeial Convention, Inc. January 1985

Adrenocorticoids (Oral)

Including Betamethasone ☐; Cortisone ☐; Dexamethasone ☐; Hydrocortisone ☐; Methylprednisolone ☐; Paramethasone ☐; Prednisolone ☐; Prednisone ☐; and Triamcinolone ☐.

Take ______________________________

☐ At the time(s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only
☐ Only when needed but not more than ____________
☐ ______________
____



About Your Medicine

Adrenocorticoids (cortisone-like substances) are produced naturally by the body and are necessary to maintain good health. If your body does not make enough, your doctor may have prescibed this medicine to help make up the difference. Cortisone-like medicines are used also to provide relief for inflamed areas of the body. They are often used as part of treatment for a number of different diseases such as severe allergies or skin problems, asthma, or arthritis.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .

- are allergic to any medicine, either prescription or nonprescription (OTC);
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine, especially antihypertensives (high blood pressure medicine), digitalis glycosides (heart medicine), diuretics (water pills), or medicine for diabetes;
- have any other medical problems, especially diabetes, heart disease, herpes simplex of the eye, infections (fungal), myasthenia gravis, stomach ulcer or other stomach problems, or tuberculosis (active, nonactive TB, or history of).

Proper Use of This Medicine

Use this medicine only as directed. Do not use more or less, more often, or for a longer period of time than ordered. To do so may cause unwanted effects.

If you miss a dose of this medicine, and your dosing schedule is one dose:

- Every other day—Take as soon as possible if you remember it the same morning, then go back to your regular schedule. If you do not remember until that afternoon, wait and take it the following morning. Then skip a day.
- Once a day—Take as soon as possible, then go back to your regular schedule. If you do not remember until the next day, skip the missed dose.
- Several times a day—Take as soon as possible, then go back to your regular schedule. If you do not remember until your next dose, double it.

Precautions While Using This Medicine

Do not stop using this medicine without first checking with your doctor. You may have to gradually reduce your dose before stopping completely.

Tell the doctor in charge that you are using this medicine:

- before having a vaccination, other immunizations, or skin tests.
- before having any kind of surgery or emergency treatment.
- if you get a serious infection or injury.

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Decreased or blurred vision
- Frequent urination
- Increased thirst
- Skin rash

With high-dose or long-term use

- Acne
- Back or rib pain
- Bloody or black tarry stools
- Continuing infections
- Continuing stomach pain or burning
- Fever or sore throat
- Filling out of face
- Irregular heartbeats
- Menstrual problems
- Mood changes
- Muscle cramps
- Muscle weakness
- Nausea or vomiting
- Seeing light halos
- Swelling of feet
- Unusual tiredness

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Increase in appetite
- Indigestion
- Nervousness
- Restlessness
- Trouble in sleeping
- Weight gain

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

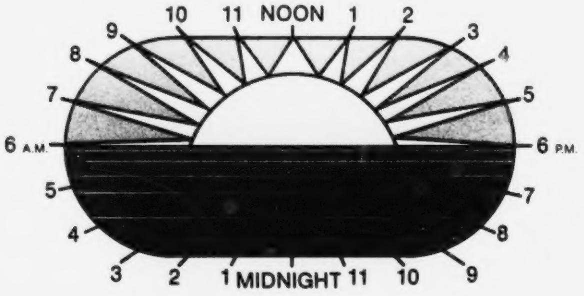
© 1985 The United States Pharmacopeial Convention, Inc. January 1985

Adrenocorticoids (Inhalation)

Including Beclomethasone ☐; Dexamethasone ☐; Flunisolide ☐; and Triamcinolone ☐.

Take ____

☐ At the time (s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only
☐ Only when needed but not more than __________
☐ ____________________
____



About Your Medicine

Beclomethasone (be-kloe-METH-a-sone), **dexamethasone** (dex-a-METH-a-sone), **flunisolide** (floo-NISS-oh-lide), and **triamcinolone** (trye-am-SIN-oh-lone) are adrenocorticoids (cortisone-like medicines). These medicines are used to help prevent asthma attacks. They will not help an attack that has started.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .

- are allergic to any medicine, either prescription or nonprescription (OTC);
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine;
- have any other medical problems.

Proper Use of This Medicine

In order for this medicine to help you, it must be taken every day in regularly spaced doses as ordered by your doctor. One to four weeks may pass before you feel its full effects.

Do not use this medicine more often than ordered. To do so may increase the chance of absorption through the lungs and the chance of side effects.

This medicine is used with a special inhaler and usually comes with patient directions. **Read the directions carefully before using.** Store the container away from heat and direct sunlight. Do not puncture, break, or burn.

If you miss a dose of this medicine, take it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses.

Precautions While Using This Medicine

If you are also taking another adrenocorticoid (for example, cortisone, prednisone) for your asthma along with this medicine, do not stop taking the other one without your doctor's advice, even if your asthma seems better. If your doctor tells you to reduce or stop taking your other adrenocorticoid, check with him or her if you notice any of the following side effects:

- Abdominal or back pain
- Dizziness or fainting
- Fever
- Muscle or joint pain
- Nausea or vomiting
- Prolonged loss of appetite
- Shortness of breath
- Unusual tiredness or weakness
- Unusual weight loss

Also check with your doctor if you go through a period of unusual stress or if you have a severe asthma attack.

If you are also using a bronchodilator inhaler, use it first, then wait 20 to 30 minutes before using this medicine, unless otherwise directed by your doctor.

Check with your doctor:

—If signs of mouth, throat, or lung infection occur.

—If you do not get better within four weeks or if you get worse.

For patients who have used adrenocorticoids in the past:

- Your doctor may want you to carry a medical identification card stating that you are using this medicine and may need additional medicine during times of unusual stress or a severe asthma attack.
- **Tell the doctor in charge that you are using this medicine before having any kind of surgery (including dental surgery) or emergency treatment.**

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Creamy white, curd-like patches inside the mouth

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Cough
- Hoarseness
- Skin rash
- Throat irritation

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

© 1985 The United States Pharmacopeial Convention, Inc.

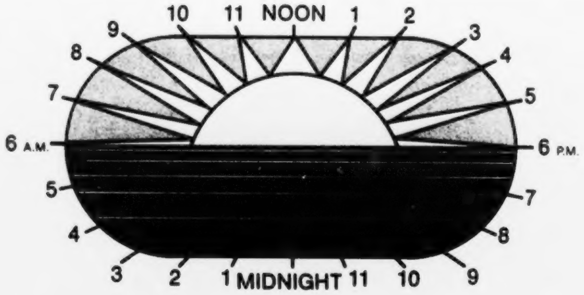
January 1985

Cromolyn (Inhalation)

Take ______________________________

☐ At the time (s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only

☐ Only when needed but not more than __________
☐ ______________________
____



About Your Medicine

Cromolyn (KROE-moe-lin) is taken by oral inhalation to prevent asthma attacks. It is also used before and during exposure to substances that cause allergic reactions to prevent bronchospasm (wheezing or difficulty in breathing). In addition, this medicine is used to prevent bronchospasm caused by exercise.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .
- are allergic to any medicine, either prescription or nonprescription (OTC);
- are using the capsule form of cromolyn and are allergic to lactose, milk, or milk products;
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine;
- have any other medical problems.

Proper Use of This Medicine

Cromolyn inhalation is used to prevent asthma or bronchospasm attacks. It will not relieve an attack that has already started. If this medicine is used during a severe attack, it may cause irritation and make the attack worse.

Use cromolyn inhalation only as directed. Do not use more of it and do not use it more often than your doctor ordered. To do so may increase side effects.

In order for cromolyn to work properly, it must be inhaled every day in regularly spaced doses as ordered by your doctor. Up to 4 weeks may pass before you feel the full effects of the medicine.

If you miss a dose of this medicine, take it as soon as possible. Then take any remaining doses for that day at regularly spaced intervals. Do not double doses.

For patients using the capsule form of cromolyn for inhalation:

- This medicine is used with a special inhaler and usually comes with patient directions. Read the directions carefully before using.
- **Do not swallow the capsules. The medicine will not work this way.**

For patients using the solution form of cromolyn for inhalation:

- Use this medicine only in a power-operated nebulizer with an adequate flow rate and equipped with a face mask or mouthpiece. Make sure you understand exactly how to use it. Hand-operated nebulizers are not suitable.

Precautions While Using This Medicine

If your symptoms do not improve or if you get worse, check with your doctor.

If you are also taking an adrenocorticoid (cortisone-like medicine) for your asthma along with this medicine, do not stop taking the adrenocorticoid even if your asthma seems better unless told to do so by your doctor.

If you are also using a bronchodilator inhaler, use the bronchodilator first. Then wait 20 to 30 minutes before using cromolyn, unless otherwise directed.

Dryness of the mouth, throat irritation, and hoarseness may occur after using this medicine. Rinsing the mouth after each dose may help prevent these effects.

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Chest pain
- Chills
- Difficult or painful urination
- Dizziness
- Frequent urge to urinate
- Headache (severe or continuing)
- Increased wheezing
- Joint pain or swelling
- Muscle pain or weakness
- Nausea or vomiting
- Skin rash, hives, or itching
- Swelling of the lips and eyes
- Tightness in chest
- Troubled breathing
- Trouble in swallowing
- Unusual sweating

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Cough
- Hoarseness

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

© 1985 The United States Pharmacopeial Convention, Inc.

January 1985

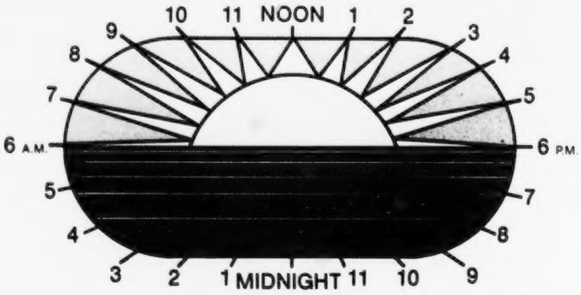
Xanthine Bronchodilators (Oral)

Including Aminophylline ☐; Dyphylline ☐; Oxtriphylline ☐; and Theophylline ☐.

Take ____

☐ At the time (s) shown below
☐ 1 hr. before or 2 hrs. after food
☐ With or immediately after food
☐ At bedtime only

☐ Only when needed but not more than __________
☐ __________________
____



About Your Medicine

Xanthines belong to the group of medicines called bronchodilators. They are given to treat the symptoms of bronchial asthma, chronic bronchitis, and emphysema. They relieve wheezing, shortness of breath, and troubled breathing.

If any of the information in this leaflet causes you special concern or if you want additional information about your medicine and its use, check with your doctor, pharmacist, or nurse. **Remember, keep this and all other medicines out of the reach of children and never share your medicines with others.**

Before Using This Medicine

Tell your doctor and pharmacist if you . . .

- are allergic to any medicine, either prescription or nonprescription (OTC);
- are pregnant or intend to become pregnant while using this medicine;
- are breast-feeding an infant;
- are taking any other prescription or nonprescription (OTC) medicine;
- are going to receive an influenza (flu) vaccine;
- smoke or have smoked tobacco or marijuana within the last 2 years;
- have any other medical problems, especially stomach ulcer (or history of) or other stomach problems.

Proper Use of This Medicine

This medicine works best when taken with a glass of water on an empty stomach (either 30 minutes to 1 hour before or 2 hours after meals) since that way it will get into the blood sooner. However, in some cases your doctor may want you to take this medicine with or right after meals to lessen stomach upset.

Use this medicine only as directed by your doctor. Do not use more of it, do not use it more often, and do not use it for a longer period of time than your doctor ordered. To do so may increase the chance of serious side effects.

In order for this medicine to help your medical problem, it must be taken every day in regularly spaced doses.

If you miss a dose of this medicine, take it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses.

Precautions While Using This Medicine

Your doctor should check your progress at regular visits, especially for the first few weeks after you begin using this medicine.

Do not change brands or dosage forms of this medicine without first checking with your doctor. Different products may not work the same way.

This medicine may add to the central nervous system stimulant effects of caffeine-containing foods or beverages such as chocolate, cocoa, tea, coffee, and cola drinks. **Avoid eating or drinking large amounts of these foods or beverages while using this medicine.**

Check with your doctor at once if you develop symptoms of influenza (flu) or a fever since either of these may increase the chance of side effects with this medicine. Also, **check with your doctor if diarrhea occurs** because the dose of this medicine may need to be changed.

Side Effects of This Medicine

Side Effects Which Should Be Reported To Your Doctor

- Bloody or black tarry stools
- Confusion or change in behavior
- Convulsions
- Increased urination
- Muscle twitching
- Skin rash or hives
- Stomach cramps or pain
- Trembling
- Unusually fast, pounding, or irregular heartbeat
- Unusually fast breathing
- Unusual tiredness or weakness
- Vomiting of blood or material that looks like coffee grounds

Side Effects Which Usually Do Not Require Medical Attention

These possible side effects may go away during treatment; however, if they continue or are bothersome, check with your doctor or pharmacist.

- Nausea
- Nervousness or restlessness

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor or pharmacist.

The information in this leaflet has been selectively abstracted from *USP DI* for use as an educational aid and does not cover all possible uses, actions, precautions, side effects, or interactions of this medicine.

© 1985 The United States Pharmacopeial Convention, Inc. January 1985

ASTHMA DRUG NAMES

Type of Drug and Route of Administration	Generic Name	Brand Names	
Adrenergic Bronchodilators (Oral/Injection)	Albuterol	Proventil Ventolin	
	Ephedrine†		
	Epinephrine†	Adrenalin Sus-Phrine	
	Ethylnorepinephrine	Bronkephrine	
	Isoproterenol	Isuprel	
	Metaproterenol	Alupent Metaprel	
	Terbutaline	Brethine Bricanyl	
Adrenergic Bronchodilators (Inhalation)	Albuterol	Proventil Ventolin	
	Epinephrine	Adrenalin AsthmaHaler Asthma Nefrin Bronchaid Mist Bronchaid Mist Suspension Bronitin Mist	Dysne-Inhal* Medihaler-Epi microNEFRIN Primatene Mist Solution Primatene Mist Suspension Vaponefrin
	Isoetharine†	Beta-2 Bronkometer	Bronchosol
	Isoproterenol†	Aeroione Isuprel Isuprel Mistometer Medihaler-Iso	Norisodrine Aerotrol Norisodrine Sulfate Vapo-Iso
	Isoproterenol with Phenylephrine	Duo-Medihaler	
	Metaproterenol	Alupent Metaprel	
Adrenocorticoids (Oral)	Betamethasone	Betnelan* Celestone	
	Cortisone†	Cortone	
	Dexamethasone†	Decadron Deronil* Dexone Dexameth	Dexasone* Hexadrol SK-Dexamethasone
	Hydrocortisone†	Cortef Cortisol §	Hydrocortone
	Methylprednisolone†	Medrol	
	Paramethasone	Haldrone	
	Prednisolone†	Cortalone Delta-Cortef Fernisolone-P	Predoxine Sterane

*not available in U.S. †generic name product available §other common name that is not the official generic name

Type of Drug and Route of Administration	Generic Name	Brand Names		
Adrenocorticoids (Oral)—continued				
	Prednisone†	Apo-Prednisone* Colisone* Cortan Deltasone	Liquid Pred Meticorten Orasone Panasol	Paracort* Prednicen-M SK-Prednisone Winpred*
	Triamcinolone†	Aristocort Kenacort		
Adrenocorticoids (Inhalation)	Beclomethasone	Beclovent Vanceril		
	Dexamethasone	Decadron		
	Flunisolide	AeroBid		
	Triamcinolone	Azmacort		
Cromolyn (Inhalation)	Cromolyn	Intal Sodium Cromoglycate §		
Xanthine Bronchodilators (Oral)	Aminophylline†	Amoline Corophyllin* Lixaminol Palaron*		Phyllocontin Somophyllin Somophyllin-DF Truphylline
	Dyphylline	Asminyl Dilin Dilor Droxine	Dyflex Dylline Dy-Phyl-Lin Lufyllin	Neothylline Oxystat Protophylline*
	Oxtriphylline	Apo-Oxtriphylline* Choledyl		Choledyl SA Novotriphyl*
	Theophylline†	Accurbron Aerolate Aerolate III Aerolate Jr. Aerolate Sr. Aquaphyllin Asmalix Bronkodyl Bronkodyl S-R Constant-T Duraphyl Elixicon Elixomin Elixophyllin Elixophyllin SR LaBID Lanophyllin Liquophylline Lixolin	Lodrane Norophylline Oralphylline Pulmophylline* Quibron-T Dividose Quibron-T/SR Respid Slo-bid Gyrocaps Slo-Phyllin Slo-Phyllin Gyrocaps Solu-Phyllin Somophyllin-12* Somophyllin-CRT Somophyllin-T Sustaire Synophylate Theo-24 Theobid Duracaps Theobid Jr. Duracaps	Theobron SR Theoclear Theoclear L.A. Theo-Dur Theo-Dur Sprinkle Theolair Theolair-SR Theolixir Theomar Theon Theophyl Theophyl SR Theospan-SR Theo-Time Theovent Trux-Ophylline Uniphyl

* not available in U.S.

† generic name product available

§ other common name that is not the official generic name

The brand names of asthma drugs have been listed for informational purposes only. Inclusion in the list does not imply endorsement by the U.S. Government or the National Heart, Lung, and Blood Institute, nor does the fact that a particular brand name has not been included indicate that that brand has been judged unsatisfactory or unacceptable. Although efforts have been made to list every brand name, there may be others of which we are not aware that contain the same active ingredients.

Note:
This list was compiled by the United States Pharmacopeial Convention and is complete as of February 1985. For new information, consult the USPC reference books that are updated yearly.

Do Drugs Cure Asthma?

No. Drugs do not cure asthma, but they do help to control it. Taking asthma medications as prescribed should enable the child with asthma to do most things without experiencing frequent asthma episodes.

What Is Meant by the Term "Therapeutic Level" of a Drug?

In order for a drug to work effectively to keep the airways open, and to protect against an asthma attack, it must be present in a certain level in the blood. This is known as the "therapeutic level."

If the amount in the blood drops below the therapeutic level, the drug becomes less effective. If the amount is higher than the therapeutic level, adverse side effects may occur.

Each type of asthma drug and each brand of each type has its own therapeutic level.

Why Is It Necessary to Take Asthma Drugs on Time?

After taking a drug, it may take half an hour or so before enough of the medicine gets into the bloodstream to reach the therapeutic level. The amount of drug in the bloodstream remains fairly constant until the body begins to use it and break it down (metabolize it). The amount of drug in the blood falls as the drug is used up and may dip below the therapeutic level.

Taking an asthma medicine on schedule keeps the blood level of the drug fairly constant by replenishing it before it falls below the therapeutic level.

If a Child Is Taking Theophylline Every 6 Hours and the Morning Dose Comes at 6:30, Is It O.K. to Delay Until 8:00 or Later on Saturday?

No. Theophylline must be taken on schedule every day of the week. It is important to take aminophylline and theophylline-type drugs exactly on time because the blood level of the drug begins to drop below the therapeutic level after 6 hours. Unless the therapeutic level is maintained by adhering to the prescribed schedule, the child is not well protected against an asthma episode.

How Much Leeway Is There in the Schedule for Taking Theophylline Type Drugs?

To keep on schedule for theophylline and to keep a fairly constant therapeutic level, the drug must be taken no more than half an hour after or before the scheduled time.

What Is a "Theophylline Level" or a "Theophylline Test"?

A theophylline level is a test to determine how much of this drug is in the bloodstream. Blood is taken from the arm and analyzed. People with asthma who are taking this drug need to have a blood level of 10 to 20 micrograms of theophylline in each milliliter of blood serum in order to derive optimal benefit from it and control their asthma. This is the "therapeutic level" for theophylline. If the level is below 10 micrograms per milliliter (mcg/ml), some individuals with asthma will develop asthma symptoms. On the other hand, some children with asthma will achieve good control of their asthma symptoms with levels of 7–9 mcg/ml (and perhaps lower) and in this circumstance, the dose need not be increased. It is important to treat the patient, not the theophylline level. If the level is above 20 mcg/ml, side effects such as irritability, nausea, and vomiting, will be noticed. At higher, overdose levels, seizures may occur, but this is rare.

Why Do Theophylline Tests Need to Be Done?

Different people metabolize, or use up, theophylline at different rates. Even though two children with asthma are taking the same dose of theophylline at the same times each day, each child may have a different level of theophylline in the bloodstream. The only way to tell is to analyze a blood sample. If a child's blood theophylline is too low, the doctor can increase the dosage so that the blood level will come into the effective (therapeutic) range. Or, if the level is too high, the doctor can change the prescription to a lower dose.

How Can Side Effects from Theophylline Be Handled or Controlled?

If a child with asthma begins to experience irritability, stomach upsets, or vomiting about an hour after taking theophylline, the doctor should determine the blood theophylline level and perhaps lower the dosage or change the formulation. These symptoms are usually due to an effect in the central nervous system related to a high serum concentration of the drug.

Should a Child with Asthma Take Medicines Other Than Those Prescribed for the Asthma?

Before taking any other medicines, especially antibiotics or over-the-counter medicines, the child with asthma or his/her parents should check with the doctor who is treating the asthma to be sure that no unwanted drug interactions will occur. Children with asthma should also be cautious about taking aspirin.

How Does Aspirin Affect Asthma?

A certain percentage of people with asthma are sensitive to aspirin. For these individuals, taking aspirin will set off an asthma attack. Many of the people who react this way to aspirin will also be sensitive to tartrazine yellow, which is yellow food dye number 5. It is also called Food, Drug, and Cosmetic Dye No. 5 (FD&C #5). If these people eat food containing this dye, an asthma attack may be triggered. Cake mixes; certain artificially colored beverages, candies, and foods; and even some drugs contain FD&C yellow number 5. If your child has this sensitivity, be sure to read the ingredients on the labels of the foods, beverages, and medicines that you use.

What About Over-the-Counter Drugs for Asthma?

People who take over-the-counter drugs for asthma do so without the benefit of advice and warnings that a physician knowledgeable about asthma can give. It is advisable to check with your child's doctor about any over-the-counter drugs, including those for asthma, that your child may be taking to be sure no unwanted interactions will occur.

What About Flu Shots or Other Vaccinations for Children with Asthma?

It is important to check with your child's asthma doctor before scheduling immunizations of any kind. Flu shots may or may not be a good idea for a child with asthma. Sometimes children get sick after having a flu shot. If flu immunization is being given at school and you wish your child to participate, be sure he/she is feeling well that day. Otherwise, wait until the child is feeling well, but do remember to check with the child's doctor first.

What About Taking Drugs Prescribed for Other Children with Asthma?

This is *never* a good idea. Each child has different needs and each child's medicines are carefully balanced in terms of types and amounts. What works for one child may not necessarily work for another child.

What Is the Greatest Danger of Overuse of Nebulized Medications Containing Isoproterenol, Metaproterenol, or Related Compounds?

Overuse of these medications during an asthma attack may cause a *tightening* of the bronchial tubes and increases difficulties in breathing. With these types of medicines, a little is good but *more* is *not better.* Do not exceed dosages or the frequency of use of these medicines as stated on the package directions. See Handout on Whiffers, Puffers, etc.

ASTHMA DRUG VOCABULARY

ACUTE ATTACK: Any worsening of breathing that occurs in a relatively short amount of time and does not respond to the usual medications.

BRONCHOCONSTRICTION: A tightening of the airways in the lungs, resulting in breathing difficulty.

BRONCHODILATOR: A drug that helps open up and relax the airways, making it easier to breathe.

COMBINATION DRUGS: Any combination of medicines that are joined into one dosage form. Some asthma medications contain theophylline, ephedrine, and a sedative in one tablet. Some doctors do not like combination drugs because the dose of the individual medications cannot be adjusted. Combination drugs may be more expensive than each ingredient bought separately.

GENERIC DRUGS: Not a brand name drug; usually a less expensive form of a drug.

MAXIMYST: A Maximyst machine is a small machine made by Meade Johnson Laboratories similar to a humidifier that delivers a bronchodilator in a warm mist directly into the lungs. This method of delivery seems to be more effective than hand-held nebulizers, but is more expensive, costing over $100. Pulmo-Aide is another brand name for a similar device.

NEBULIZER: A hand-held atomizer that can deliver medicine directly into the lungs.

P.R.N. (p.r.n): *Pro re nata;* a designation for taking medicines "as needed," rather than on a regular basis.

Q.I.D.: Four times a day.

SIDE EFFECT: Result that a drug may have that is other than the one for which it was intended. The most common side effects are presented in the drug information sheets.

ASKING QUESTIONS ABOUT MEDICATIONS

As a consumer, you have the right and responsibility to have complete information about the medicines that are prescribed for you or your child. Clear instructions should be provided for any medication that your child takes. A list of questions follows; you should be able to answer all of them before you leave the doctor's office.

1. What is this drug, and what is it supposed to do?
2. Exactly how much, when, and for how long, should it be taken?
3. What are the possible side effects? What should be done to counteract them? Which side effects should be reported at once to the doctor?
4. How long does it take for the medicine to start to work?
5. What should I do if it doesn't seem to be working?
6. Are there any medicines or foods that should not be used while taking this drug?
7. Should this drug be taken before, with, or after meals?
8. Is there a less expensive form of this drug available?

HELPFUL FACTS ABOUT MEDICATIONS FOR ASTHMA

For mild asthma, over-the-counter, NONPRESCRIPTION DRUGS may be enough to control the asthma. These drugs are *not* controlling the asthma if: (1) more than the amount recommended on the bottle or box is needed to prevent wheezing or tightness, or (2) the recommended amount is needed more often than is recommended. In either case, you may need a stronger, prescription drug and you should see your doctor. If you are taking nonprescription medication for asthma, be sure that your doctor knows.

According to the American Lung Association, successful use of asthma medication means adding more potent agents only when simpler drugs have not been effective.

It is important that asthma medicine be taken EXACTLY AS IS PRESCRIBED to have it work correctly. If a medicine is prescribed for every 6 hours, it must be taken every 6 hours, even if a dose falls in the middle of the night. If that dose is always omitted, be sure to let your doctor know; a longer acting form of the drug may be available.

There are many possible SIDE EFFECTS for most drugs. Medicines affect people differently. Some people experience many side effects; other people suffer few side effects for any medicine. If you have questions, check with your doctor.

A NEBULIZER is an atomizer that delivers medication directly into the lungs. Check with your own doctor as to the proper guidelines for nebulizer use. Using too much nebulized bronchodilator is dangerous. Be sure to understand your own doctor's directions. Generally, no more than 3 to 4 doses should be taken in 24 hours. One dose consists of one whiff, then another whiff. Hence, if you have used 6 to 8 whiffs in one 24-hour period, tell your doctor before you use any more.

Isuprel, Alupent, and Bronkometer are all prescription nebulized drugs that may be used before exercise to PREVENT ASTHMA. Check with your doctor for details.

The following drugs should be AVOIDED by people who have asthma. Ask your doctor or pharmacist for specifics: propranolol (Inderal), morphine, MAO inhibitors (some antidepressants), tricyclic drugs (another type of antidepressant).

EXPECTORANTS are substances that help bring up excess mucus. Natural expectorants include garlic, mustard, horseradish, and hot peppers.

NOTE: The information here is not specific to children. Children sometimes respond to drugs differently from adults, and establishing correct doses may be difficult. Again, check with your doctor about any specific concerns you may have.

INHALED BRONCHODILATORS: WHIFFERS, PUFFERS, INHALERS, BREATHERS, NEBULIZERS

Bronchodilators that are supplied in an aerosol container and intended to be inhaled are referred to as "whiffers, puffers, inhalers, breathers, or nebulizers." Examples of medicines given in this form include Alupent (metaproterenol), Bronkosol (isoetharine), Isuprel (isoproterenol), Medihaler-Epi (epinephrine), and Duo-Medihaler (isoproterenol plus phenylephrine). Other names for inhaled bronchodilators are Bronkometer, Mistometer, and Aerohaler. The following discussion *does not* refer to beclomethasone (Vanceril) or cromolyn sodium (Intal). They are not bronchodilators and *should not be given to relieve breathing difficulties.*

Using a Nebulizer

If a nebulizer *is* used, it is very important to use it properly. Be sure that your doctor gives you and your child clear instructions on how to use it. The doctor should also give you some guidelines on *when* and *how much* the inhaler can be used. Be sure that you and your child understand the total number of whiffs that can be used in a 24-hour period. If the child wants to use it more than has been prescribed, that may be a signal that other medications are not working as they should. Your doctor needs to know this information. The other medications may need to be adjusted, or a medication monitoring program may be necessary to be sure that your child is taking other medications exactly as prescribed.

A Maximyst or Pulmo-Aide machine can deliver many of the same medicines as hand-held nebulizers can. These types of machines seem to offer more effective bronchodilation but the exact reasons why are not yet known. Since these machines do not offer as quick, portable relief as nebulizers, there is less chance of overuse.

Members of the medical profession disagree about the use of inhalers, especially with children. The following information and debate is presented so that you as a consumer can be well-informed and, with your doctor, make a decision about them yourself. The discussion is based on the use of *prescription* inhalers only. This type of inhaler is available only with a prescription from your physician. If you use a nonprescription inhaler, be sure to follow the directions on the label, and do not exceed the specified dose.

Arguments Against Use of Inhaled Bronchodilators

Much of the current reluctance to use inhalers or nebulizers (frequently shortened to "nebs"), especially with children, comes from a dramatic increase in the number of asthma deaths in Great Britain in the early 1960's. When these deaths were investigated, it was apparent that overuse of inhalers caused the bronchial tubes to close. Although this tragic situation demonstrates the potential dangers of nebulized medicines, the inhalers used in Great Britain at that time contained a dose of medicine five times stronger than the dose allowed in the United States.

Some physicians are also hesitant to prescribe nebulizers because they are afraid that patients will neglect their regularly prescribed medications and will rely on the inhalers more than they should. Nebulizers are convenient and easy to use. They are hand-held, portable, and offer instant relief for breathing difficulties. With availability of a nebulizer that quickly relieves breathing difficulties, it is tempting to neglect regularly prescribed medications. As the nebulizer is used more frequently, overdose becomes a real possibility.

Another concern about neb usage is that people may develop a psychological dependency on them. If the inhaler is misplaced or forgotten and an attack starts, a person who has learned to rely on an inhaler for instant relief may panic more quickly than someone who is not expecting such speedy relief. If the inhaler had not been prescribed in the first place, patients would have learned other ways of coping with an attack.

The associated dangers with nebulizers come from *misuse* or *abuse* of the nebulizers, and not from any inherent danger in the nebulized medicine itself. Being aware of these potential problem areas can help guard against misuse and abuse.

Arguments In Favor of Inhaled Bronchodilators

An important advantage of nebulized medicines is that they can be used preventively as a "pretreat." To pretreat means to use medicine *before* an activity that may serve as an asthma trigger. Nebulizers are used by many people with exercise-induced asthma so that they can participate in sports activities. Preventive pretreatment enables them to exercise more fully, and experience the good feeling of using their bodies in vigorous activity. Pretreats may allow people with asthma to develop the physical side of themselves and provide them with a way to excel and feel good about themselves. This feeling is especially important for children who need positive experiences to develop a healthy self-concept.

Pretreats may be useful in other situations. A trip to a relative's house who has a cat or a visit to a rodeo may be made less worrisome with a pretreatment to forestall an attack. A nebulizer is convenient to relieve an attack in these same kinds of occasions. Activities can be attempted, knowing that the nebulizer is available for quick relief if a problem does occur. This availability may enable a person with asthma to be less confined or more willing to try new activities.

Nebulizer Use by Children

Because of the potential dangers of inhalers, some authorities on asthma believe that their use by children should be controlled or supervised by adults. Some experts recommend that children should not have the inhaler in their possession, but have access to it through an adult. However, this is an individual matter dependent upon the age and sense of responsibility of each child. Some elementary school children have learned how to be responsible with nebulizers and to use them wisely. Families of other youngsters feel that nebulizer use should be closely supervised. The final decision on how the matter is handled must be left up to the family after consultation with the doctor and other adults, such as school personnel, who may be involved in the care of the child with asthma.

Children need to be taught to use all medication properly, and then gradually be given the responsibility for medication use. It is important to remember that children will become responsible only when given opportunities to practice skills in situations demanding increasing responsibility. As in learning anything new, medication management involves taking small steps toward the ultimate goal of total responsibility.

Nebulizer Use by Adolescents

Some health and school personnel believe that the use of nebs by teenagers should be closely monitored. They warn that adolescents will use inhalers to get high. This "high" has been described as a sudden rush that lasts for a few minutes at most and results from the heart suddenly speeding up. Most children and adults do not like this feeling. Although nebulizers (along with nutmeg or oregano) might be abused, the danger of inhalers being abused like an illicit drug seems small. Certainly this argument should not prevent a teenager from experiencing the benefits provided by this form of medicine.

In Conclusion . . .

The preceding debate is presented so that you can make an educated decision about nebulizer use. On the pro side, nebulizers offer quick, convenient relief for asthma symptoms; on the con side, nebulizers can easily be abused and can interfere with other types of treatment. Be sure to discuss any questions or concerns that you have with your physician. Then the decision is up to you.

COMMON QUESTIONS ABOUT ASTHMA MEDICINES

Do Drugs Cure Asthma?

No. Drugs do not cure asthma, but they do help to control it. Taking asthma medications as prescribed should enable the child with asthma to do most things without experiencing frequent asthma episodes.

What Is Meant by the Term "Therapeutic Level" of a Drug?

In order for a drug to work effectively to keep the airways open, and to protect against an asthma attack, it must be present in a certain level in the blood. This is known as the "therapeutic level."

If the amount in the blood drops below the therapeutic level, the drug becomes less effective. If the amount is higher than the therapeutic level, adverse side effects may occur.

Each type of asthma drug and each brand of each type has its own therapeutic level.

Why Is It Necessary to Take Asthma Drugs on Time?

After taking a drug, it may take half an hour or so before enough of the medicine gets into the bloodstream to reach the therapeutic level. The amount of drug in the bloodstream remains fairly constant until the body begins to use it and break it down (metabolize it). The amount of drug in the blood falls as the drug is used up and may dip below the therapeutic level.

Taking an asthma medicine on schedule keeps the blood level of the drug fairly constant by replenishing it before it falls below the therapeutic level.

If a Child Is Taking Theophylline Every 6 Hours and the Morning Dose Comes at 6:30, Is It O.K. to Delay Until 8:00 or Later on Saturday?

No. Theophylline must be taken on schedule every day of the week. It is important to take aminophylline and theophylline-type drugs exactly on time because the blood level of the drug begins to drop below the therapeutic level after 6 hours. Unless the therapeutic level is maintained by adhering to the prescribed schedule, the child is not well protected against an asthma episode.

How Much Leeway Is There in the Schedule for Taking Theophylline Type Drugs?

To keep on schedule for theophylline and to keep a fairly constant therapeutic level, the drug must be taken no more than half an hour after or before the scheduled time.

What Is a "Theophylline Level" or a "Theophylline Test"?

A theophylline level is a test to determine how much of this drug is in the bloodstream. Blood is taken from the arm and analyzed. People with asthma who are taking this drug need to have a blood level of 10 to 20 micrograms of theophylline in each milliliter of blood serum in order to derive optimal benefit from it and control their asthma. This is the "therapeutic level" for theophylline. If the level is below 10 micrograms per milliliter (mcg/ml), some individuals with asthma will develop asthma symptoms. On the other hand, some children with asthma will achieve good control of their asthma symptoms with levels of 7–9 mcg/ml (and perhaps lower) and in this circumstance, the dose need not be increased. It is important to treat the patient, not the theophylline level. If the level is above 20 mcg/ml, side effects such as irritability, nausea, and vomiting, will be noticed. At higher, overdose levels, seizures may occur, but this is rare.

Why Do Theophylline Tests Need to Be Done?

Different people metabolize, or use up, theophylline at different rates. Even though two children with asthma are taking the same dose of theophylline at the same time each day, each child may have a different level of theophylline in the bloodstream. The only way to tell is to analyze a blood sample. If a child's blood theophylline is too low, the doctor can increase the dosage so that the blood level will come into the effective (therapeutic) range. Or, if the level is too high, the doctor can change the prescription to a lower dose.

How Can Side Effects from Theophylline Be Handled or Controlled?

If a child with asthma begins to experience irritability, stomach upsets, or vomiting about an hour after taking theophylline, the doctor should determine the blood theophylline level and perhaps lower the dosage or change the formulation. These symptoms are usually due to an effect in the central nervous system related to a high serum concentration of the drug.

Should a Child with Asthma Take Medicines Other Than Those Prescribed for the Asthma?

Before taking any other medicines, especially antibiotics or over-the-counter medicines, the child with asthma or his/her parents should check with the doctor who is treating the asthma to be sure that no unwanted drug interactions will occur. Children with asthma should also be cautious about taking aspirin.

How Does Aspirin Affect Asthma?

A certain percentage of people with asthma are sensitive to aspirin. For these individuals, taking aspirin will set off an asthma attack. Many of the people who react this way to aspirin will also be sensitive to tartrazine yellow, which is yellow food dye number 5. It is also called Food, Drug, and Cosmetic Dye No. 5 (FD&C #5). If these people eat foods containing this dye, an asthma attack may be triggered. Cake mixes, certain artificially colored beverages, candies, and foods and even some drugs contain FD&C yellow number 5. If your child has this sensitivity, be sure to read the ingredients on the labels of the foods, beverages, and medicines that you use.

What About Over-the-Counter Drugs for Asthma?

People who take over-the-counter drugs for asthma do so without the benefit of advice and warnings that a physician knowledgeable about asthma can give. It is advisable to check with your child's doctor about any over-the-counter drugs, including those for asthma, that your child may be taking to be sure no unwanted interactions will occur.

What About Flu Shots or Other Vaccinations for Children with Asthma?

It is important to check with your child's asthma doctor before scheduling immunizations of any kind. Flu shots may or may not be a good idea for a child with asthma. Sometimes children get sick after having a flu shot. If flu immunization is being given at school and you wish your child to participate, be sure he/she is feeling well that day. Otherwise, wait until the child is feeling well, but do remember to check with the child's doctor first.

What About Taking Drugs Prescribed for Other Children with Asthma?

This is *never* a good idea. Each child has different needs and each child's medicines are carefully balanced in terms of types and amounts. What works for one child may not necessarily work for another child.

What Is the Greatest Danger of Overuse of Nebulized Medications Containing Isoproterenol, Metaproterenol, or Related Compounds?

Overuse of these medications during an asthma attack may cause a *tightening* of the bronchial tubes and increases difficulties in breathing. With these types of medicines, a little is good but *more* is *not better*. Do not exceed dosages or the frequency of use of these medicines as stated on the package directions. See handout on whiffers, puffers, and inhalers.

ASTHMA DRUG **VOCABULARY**

ACUTE ATTACK: Any worsening of breathing that occurs in a relatively short amount of time and does not respond to the usual medications.

BRONCHOCONSTRICTION: A tightening of the airways in the lungs, resulting in breathing difficulty.

BRONCHODILATOR: A drug that helps open up and relax the airways, making it easier to breathe.

COMBINATION DRUGS: Any combination of medicines that are joined into one dosage form. Some asthma medications contain theophylline, ephedrine, and a sedative in one tablet. Some doctors do not like combination drugs because the dose of the individual medications cannot be adjusted. Combination drugs may be more expensive than each ingredient bought separately.

GENERIC DRUGS: Not a brand name drug; usually a less expensive form of a drug.

MAXIMYST: A Maximyst machine is a small machine made by Meade Johnson Laboratories similar to a humidifier that delivers a bronchodilator in a warm mist directly into the lungs. This method of delivery seems to be more effective than hand-held nebulizers, but is more expensive, costing over $100. Pulmo-Aide is another brand name for a similar device.

NEBULIZER: A hand-held atomizer that can deliver medicine directly into the lungs.

P.R.N. (p.r.n.): *Pro re nata*; a designation for taking medicines "as needed," rather than on a regular basis.

Q.I.D.: Four times a day.

SIDE EFFECT: Result that a drug may have that is other than the one for which it was intended. The most common side effects are presented in the drug information sheets.

Parent Handout 2-2.

ASKING QUESTIONS ABOUT **MEDICATIONS**

As a consumer, you have the right and responsibility to have complete information about the medicines that are prescribed for you or your child. Clear instructions should be provided for any medication that your child takes. A list of questions follows; you should be able to answer all of them before you leave the doctor's office.

1. What is this drug, and what is it supposed to do?
2. Exactly how much, when, and for how long, should it be taken?
3. What are the possible side effects? What should be done to counteract them? Which side effects should be reported at once to the doctor?
4. How long does it take for the medicine to start to work?
5. What should I do if it doesn't seem to be working?
6. Are there any medicines or foods that should not be used while taking this drug?
7. Should this drug be taken before, with, or after meals?
8. Is there a less expensive form of this drug available?

HELPFUL FACTS ABOUT MEDICATIONS FOR ASTHMA

For mild asthma, over-the-counter, NONPRESCRIPTION DRUGS may be enough to control the asthma. These drugs are *not* controlling the asthma if: (1) more than the amount recommended on the bottle or box is needed to prevent wheezing or tightness, or (2) the recommended amount is needed more often than is recommended. In either case, you may need a stronger, prescription drug and you should see your doctor. If you are taking nonprescription medication for asthma, be sure that your doctor knows.

According to the American Lung Association, successful use of asthma medication means adding more potent agents only when simpler drugs have not been effective.

It is important that asthma medicine be taken EXACTLY AS IS PRESCRIBED to have it work correctly. If a medicine is prescribed for every 6 hours, it must be taken every 6 hours, even if a dose falls in the middle of the night. If that dose is always omitted, be sure to let your doctor know; a longer acting form of the drug may be available.

There are many possible SIDE EFFECTS for most drugs. Medicines affect people differently. Some people experience many side effects; other people suffer few side effects for any medicine. If you have questions, check with your doctor.

A NEBULIZER is an atomizer that delivers medication directly into the lungs. Check with your own doctor as to the proper guidelines for nebulizer use. Using too much nebulized bronchodilator is dangerous. Be sure to understand your own doctor's directions. Generally, no more than 3 to 4 doses should be taken in 24 hours. One dose consists of one whiff, then another whiff. Hence, if you have used 6 to 8 whiffs in one 24-hour period, tell your doctor before you use any more.

Isuprel, Alupent, and Bronkometer are all prescription nebulized drugs that may be used before exercise to PREVENT ASTHMA. Check with your doctor for details.

The following drugs should be AVOIDED by people who have asthma. Ask your doctor or pharmacist for specifics: propranolol (Inderal), morphine, MAO inhibitors (some antidepressants), tricyclic drugs (another type of antidepressant).

EXPECTORANTS are substances that help bring up excess mucus. Natural expectorants include garlic, mustard, horseradish, and hot peppers.

NOTE: The information here is not specific to children. Children sometimes respond to drugs differently from adults, and establishing correct doses may be difficult. Again, check with your doctor about any specific concerns you may have.

INHALED BRONCHODILATORS:
WHIFFERS, PUFFERS, INHALERS, BREATHERS, NEBULIZERS

Bronchodilators that are supplied in an aerosol container and intended to be inhaled are referred to as "whiffers, puffers, inhalers, breathers, or nebulizers." Examples of medicines given in this form include Alupent (metaproterenol), Bronkosol (isoetharine), Isuprel (isoproterenol), Medihaler-Epi (epinephrine), and Duo-Medihaler (isoproterenol plus phenylephrine). Other names for inhaled bronchodilators are Bronkometer, Mistometer, and Aerohaler. The following discussion *does not* refer to beclomethasone (Vanceril) or cromolyn sodium (Intal). They are not bronchodilators and *should not be given to relieve breathing difficulties.*

Using a Nebulizer

If a nebulizer *is* used, it is very important to use it properly. Be sure that your doctor gives you and your child clear instructions on how to use it. The doctor should also give you some guidelines on *when* and *how much* the inhaler can be used. Be sure that you and your child understand the total number of whiffs that can be used in a 24-hour period. If the child wants to use it more than has been prescribed, that may be a signal that other medications are not working as they should. Your doctor needs to know this information. The other medications may need to be adjusted, or a medication monitoring program may be necessary to be sure that your child is taking other medications exactly as prescribed.

A Maximyst or Pulmo-Aide machine can deliver many of the same medicines as hand-held nebulizers can. These types of machines seem to offer more effective bronchodilation but the exact reasons why are not yet known. Since these machines do not offer as quick, portable relief as nebulizers, there is less chance of overuse.

Members of the medical profession disagree about the use of inhalers, especially with children. The following information and debate is presented so that you as a consumer can be well-informed and, with your doctor, make a decision about them yourself. The discussion is based on the use of *prescription* inhalers only. This type of inhaler is available only with a prescription from your physician. If you use a nonprescription inhaler, be sure to follow the directions on the label, and do not exceed the specified dose.

Arguments Against Use of Inhaled Bronchodilators

Most of the current reluctance to use inhalers or nebulizers (frequently shortened to "nebs"), especially with children, comes from a dramatic increase in the number of asthma deaths in Great Britain in the early 1960's. When these deaths were investigated, it was apparent that overuse of inhalers caused the bronchial tubes to close. Although this tragic situation demonstrates the potential dangers of nebulized medicines, the inhalers used in Great Britain at that time contained a dose of medicine five times stronger than the dose allowed in the United States.

Some physicians are also hesitant to prescribe nebulizers because they are afraid that patients will neglect their regularly prescribed medications and will rely on the inhalers more than they should. Nebulizers are convenient and easy to use. They are hand-held, portable, and offer instant relief for breathing difficulties. With availability of a nebulizer that quickly relieves breathing difficulties, it is tempting to neglect regularly prescribed medications. As the nebulizer is used more frequently, overdose becomes a real possibility.

Another concern about neb usage is that people may develop a psychological dependency on them. if the inhaler is misplaced or forgotten and an attack starts, a person who has learned to rely on an inhaler for instant relief may panic more quickly than someone who is not expecting such speedy relief. If the inhaler had not been prescribed in the first place, patients would have learned other ways of coping with an attack.

The associated dangers with nebulizers come from *misuse* or *abuse* of the nebulizers, and not from any inherent danger in the nebulized medicine itself. Being aware of these potential problem areas can help guard against misuse and abuse.

Arguments In Favor of Inhaled Bronchodilators

An important advantage of nebulized medicines is that they can be used preventively as a "pretreat." To pretreat means to use medicine *before* an activity that may serve as an asthma trigger. Nebulizers are used by many people with exercise-induced asthma so that they can participate in sports activities. Preventive pretreatment enables them to exercise more fully, and experience the good feeling of using their bodies in vigorous activity. Pretreats may allow people with asthma to develop the physical side of themselves and provide them with a way to excel and feel good about themselves. This feeling is especially important for children who need positive experiences to develop a healthy self-concept.

Pretreats may be useful in other situations. A trip to a relative's house who has a cat or a visit to a rodeo may be made less worrisome with a pretreatment to forestall an attack. A nebulizer is convenient to relieve an attack in these same kinds of occasions. Activities can be attempted, knowing that the nebulizer is available for quick relief if a problem does occur. This availability may enable a person with asthma to be less confined or more willing to try new activities.

Nebulizer Use by Children

Because of the potential dangers of inhalers, some authorities on asthma believe that their use by children should be controlled or supervised by adults. Some experts recommend that children should not have the inhaler in their possession, but have access to it through an adult. However, this is an individual matter dependent upon the age and sense of responsibility of each child. Some elementary school children have learned how to be responsible with nebulizers and to use them wisely. Families of other youngsters feel that nebulizer use should be closely supervised. The final decision on how the matter is handled must be left up to the family after consultation with the doctor and other adults, such as school personnel, who may be involved in the care of the child with asthma.

Children need to be taught to use all medication properly, and then gradually be given the responsibility for medication use. It is important to remember that children will become responsible only when given opportunities to practice skills in situations demanding increasing responsibility. As in learning anything new, medication management involves taking small steps toward the ultimate goal of total responsibility.

Nebulizer Use by Adolescents

Some health and school personnel believe that the use of nebs by teenagers should be closely monitored. They warn that adolescents will use inhalers to get high. This "high" has been described as a sudden rush that lasts for a few minutes at most and results from the heart suddenly speeding up. Most children and adults do not like this feeling. Although nebulizers (along with nutmeg or oregano) might be abused, the danger of inhalers being abused like an illicit drug seems small. Certainly this argument should not prevent a teenager from experiencing the benefits provided by this form of medicine.

In Conclusion . . .

The preceding debate is presented so that you can make an educated decision about nebulizer use. On the pro side, nebulizers offer quick, convenient relief for asthma symptoms; on the con side, nebulizers can easily be abused and can interfere with other types of treatment. Be sure to discuss any questions or concerns that you have with your physician. Then the decision is up to you.

LEARNING BEHAVIOR

Introduction to the Social Learning Theory

In our daily lives all of us use self-management skills. That is, we assume responsibility for daily tasks such as grocery shopping, going to work, paying bills, and brushing our teeth. People with asthma need even better self-management skills than the average person because these skills affect their health. An important part of asthma management is self-management. Specifically, this means that the person with asthma must learn to assume as much responsibility for asthma management as his/her maturity will allow. This responsibility includes knowing the medicines to be taken, remembering to take those medicines on time, being able to recognize and act on early signs of an asthma episode, and learning how to adjust activities in order to avoid breathing problems.

But, how do we start helping someone learn these skills? When we learn to do something new, we need encouragement and support. Few of us learn or experiment if we are ignored or if we get negative responses from those around us, especially from those important to us. This is a principle that we all know from common sense and experience.

The Social Learning Theory is a system for helping someone learn a new skill. Its principles are neither new nor magical. They are time-proven ideas that are organized in such a way that they can be consciously and consistently applied. The following is a brief description of these learning principles. The examples given refer to teaching children new skills and behaviors but the principles apply to persons of any age.

Principles of Social Learning Theory: Positive Reinforcement, Small Steps, Specific Goals

POSITIVE REINFORCEMENT

Positive reinforcement, which is the backbone of the Social Learning Theory, helps people learn and encourages them to try new things. Some examples of positive reinforcers are smiles, a pat on the back, attention, an encouraging word or look, and praise. We all need and thrive on positive reinforcement. Unfortunately, though, most of us need to practice giving positive reinforcement. If something makes your child feel genuinely good, rather than guilty, ashamed, frustrated, or angry, then it's a reinforcer. The following describes how to use positive reinforcement:

- Reinforce Immediately. Positive reinforcement is most effective when given immediately after the desired behavior has occurred. Your child will make the connection between the behavior and the reinforcement more easily if there is no lag time. The desired behavior will then be more likely to be repeated. For example, your daughter has been coming home late for dinner but tonight she is on time. Tell her as soon as you see her that you are proud of her for coming in on time. Don't wait until hours later. The reinforcement will have lost some of its "oomph" by then.

- Be Specific. It's important that your child knows why he/she is being reinforced. If your son remembers his morning dose of medicine, tell him that it's great that he remembered his early meds. This way, there is no confusion about what he did that you think is great. If you hadn't been specific, he may have thought that you were congratulating him for getting up on time.
- Reinforce Often. If your child is trying to learn a new behavior or skill, he/she will need encouragement often, especially at first, to help build confidence and pride as he/she learns. As the new skill or behavior becomes habit, the amount of positive reinforcement can be reduced. It's important, however, to step up the reinforcement if the desired behavior begins to weaken. Helping your child learn takes consistent and diligent effort but the payoff is less nagging, fewer arguments, and a happier, more independent child.

SMALL STEPS

Each skill is made up of many small steps. You must learn to crawl before you can walk. But before learning to crawl you have to learn how to kneel on all fours, and before that, to sit up, and before that, to roll over, etc. The Graduated Length Method of teaching someone to ski is a widely used example of learning in small steps. First the pupil learns to balance and control very short skis. As the level of skill improves, longer and longer skis are used until eventually the pupil is able to control skis of normal length. Cleaning a child's room is made up of many small tasks: putting toys away, picking clothes up from the floor, making the bed, dusting, vacuuming.

SPECIFIC GOALS

Describe the final goal in detail. A small child may not be able to understand what you mean by the thundering cry: "Clean Up Your Room!" "Clean" is a very general term and each of you is likely to have different meanings for that demand. To your child a clean room may mean toys out of the middle of the floor and the bedspread pulled up over the pillow. But if you make up a list of what you mean, either with pictures or in words, to give your child specific reminders to go by, you are more likely to understand each other. For example, tell him/her that shoes should be in the closet, dirty clothes in the hamper, clean clothes folded and put away, and the bed made. Be sure that your child knows what you mean by "dirty" and how to comply with items on the list. For example, he/she must know the basic skills needed to fold clothes and make a bed.

Example: Helping Your Child Take Over Asthma Self Management Tasks

The following example illustrates how to apply the principles described above to teaching a child to manage his/her medication. When one step is learned well, move on to the next one until the final goal is achieved.

Step 1: *The child learns to identify shape, size, and color of the medications to be taken.* To teach your child what Slo-Phyllin looks like, for example, show him/her that it is purple, shiny, oval like a football and larger than an M & M candy. Have your child repeat each characteristic after you and reinforce him/her after each part that is correctly remembered.

Step 2: *The child learns the names of the medications he/she is taking.* It may be helpful to work out with your child gimmicks for helping him/her remember these strange names. For example Slo-Phyllin could be broken down to "slow," "fill," "in," words your child already knows. Again, have your child repeat the name and reinforce him/her when it is correctly remembered.

Step 3: *The child is able to verbalize the times and situations when the meds are to be taken.* For example, evening meds are to be taken at 8:00, which is bedtime. Reinforce correct responses. (Helpful Hint: Each time the medications are taken, have the child make a mark on a daily calendar. This will not only serve as a kind of reinforcer but also a check that the meds for that time have been taken. At the end of the day, if medications are to be taken four times a day, for example, there should be four marks on the calendar for that day.)

Step 4: *The child takes the medications under your close supervision according to a routine you set up with your child.* For example, you put the morning pills in the middle of the breakfast plate. Before the plate can be filled with food, the medicine must be taken. Your child can say something like "Okay Mom, I'm taking my pill now." Parent watches and reinforces when the medication is taken.

Step 5: *The child goes to you and asks for his/her medicine at the proper time.* You give the child the medicine and watch while it is taken. Reinforce.

Step 6: *The child takes you to the medicine bottle and takes out his/her dosage. He/she takes the medicine in front of you.* Reinforce.

Step 7: *The child gets the medicine him/herself.* After 2 weeks or so of consistently remembering and getting the correct medicine without constant reminding, he/she is ready for this step. For the next three times, supervise again. If there are no problems, continue gradually tapering off your supervision. Reinforce.

Step 8: *The child is taking medicine completely on his/her own.* The child is praised for dealing with his/her own medication responsibility.

Step 9: *The child anticipates problem situations* such as vacations, changes in school routine, spending the night with a friend, etc. If necessary, help your child develop a method for remembering the medications at unusual times.

Hints: If some of these steps are too large for your child, break them down into smaller ones. If a new skill is not sticking, go back to the previous step and try again. Remember to reinforce *often* and *immediately* after the desired behavior.

Helpful Hints and Possible Pitfalls

1. Whenever possible, ignore a behavior you do not like. An undesirable alternative is nagging, which is not only miserable for all involved, but is also unsuccessful at helping someone learn a new skill or behavior.
2. Do not debate or argue with your child about what you expect or about the consequences if those expectations are not met. This turns into a power play and the result is usually anger, not change.

3. Discuss with your child what you are trying to do and why. Be sure that each step along the way is explained so that your child will know what to expect as well as what is expected of him/her. Caution: It is easy to let yourself get caught up in an argument at this point. If one begins to develop, say what you mean and then drop it and walk away.
4. Provide natural consequences whenever possible. We all feel freer to learn and try new things if we know what to expect. It makes more sense to let your 7-year-old go outside and play kickball with his friends than to tell him no because he might wheeze. If he overexerts himself, which he may not do, wheezing would be the natural consequence. In this way he will learn for himself that his actions will result in logical consequences.
5. Change is slow. Try not to get impatient if the desired behavior is a long time in coming. It has taken a long time for your child's current habits to develop. It will take a long time for new ones to take their place.
6. For small children especially, provide a certain amount of time for them to get ready before there is something you want done. Example:

   Right Way: "Bedtime is in 15 minutes. Start finishing up the game."
   Wrong way: "Put away the game. It's time for bed."
7. Be consistent when setting up and enforcing rules and expectations. Again, knowing what to expect will help your child succeed.
8. Reinforcers besides the "social" ones above can also be used. They include such treats as later bedtime, food, TV time, money, prizes, etc. Never use these, however, without also using the social reinforcers at the same time. The social ones are the most powerful. There is no substitute for personal attention.
9. Be sure that the reinforcers you use are meaningful for your child. If you think they are great ones but your child is not responding to them, pick new ones together.
10. It's often easier and faster to do yourself whatever it is you are trying to have your child learn to do. Fight this urge. The more chances your child gets to practice, the faster he/she will learn.
11. Think about something that you enjoyed learning. See if you can pick out the factors that made the learning experience a positive one for you and apply those concepts when helping your child learn.
12. If your child is not learning the skills ana behaviors you are working on, go through this checklist and see if you are *consistently* doing each of the following:

_____a) Stating clearly and specifically to your child what your expectations are.
_____b) Giving positive reinforcement immediately and often for desired behavior.
_____c) Using reinforcers that are meaningful to your child.
_____d) Setting up small steps to reach the final goal.
_____e) Providing natural consequences for undesired behavior.
_____f) Following through on the consequences when the desired behavior is not achieved.
_____g) Ignoring undesirable behavior as much as possible; that is, not reinforcing it by paying attention, even negative attention, to it.
_____h) Being consistent about what you expect of your child.

PARENTS' SESSION **THREE**

BASIC CONCEPTS OF LEARNING—POSITIVE REINFORCEMENT

GOAL

- To explain the concept of positive reinforcement and its importance in any learning process.

RESOURCES

Leader Background Material:
    A Guide to the Positive Reinforcement Audiotape
    Guide to Situation Cards
    Situation Card Problems
    Families, by Gerald Patterson*
    Living with Children, by Gerald Patterson*
    Learning Behavior

Audiotape.
    Positive Reinforcement, Gerald R. Patterson and Marion S. Forgatch*

Equipment:
    Tape recorder

Handouts:
    Situation Card Problems
    Families (optional)
    Living with Children (optional)

*Ordering Information:

Families: Applications of Social Learning to Family Life, Gerald R. Patterson, 1975, $9.95/copy.

Living with Children: New Methods for Parents and Teachers, Gerald R. Patterson, 1976, $8.95/copy.

Family Living Series, Part I, "Positive Reinforcement,"Gerald R. Patterson and Marion S. Forgatch, 1975. This first tape of the *Family Living Series* is $10.95 for the single tape.

The books and the single audiotape may be obtained from:
Research Press
Box 317720
Champaign, Illinois 68121
Phone: (217) 352-3273

ACTIVITY LIST

Topic/Activity	Leader Background	Handouts
Welcome and Review		
Introduction to New Focus		
Audiotape: *Positive Reinforcement*	Guide to the *Positive Reinforcement* Audiotape Learning Behavior *Families* *Living with Children*	
Situation Cards	Guide to Situation Cards Situation Card Problems	Situation Cards
Assignment		Learning Behavior *Living with Children* (optional) *Families*

Optional Activities	Leader Background	Handouts
Do-It-Yourself Audiotape	(See Session 4, Behavior Management and Asthma) *Families* *Living with Children*	
Introduction to Flowcharts	(See Sessions 4, 5, 6.)	Selected Flowcharts from Sessions 4, 5, 6

PARENTS' SESSION THREE

BASIC CONCEPTS OF LEARNING—TEACHING NOTES

Orientation for the Leader

Starting with the third session, emphasis will shift from the medical management of asthma to the behavioral management of asthma.

Consequently, the style of the group will change. There will be less lecture, less need to absorb basic facts, and less need to be passive listeners. Instead, the group will be more participatory and more discussion oriented. The leader must help the group focus on their own roles and on ways in which they can change behavior to improve asthma management.

This session will be a move away from the idea that the doctor and the medicines are the sole means of controlling the asthma. This can be a frustrating experience because it is easier to think that the answers to problems with asthma can be solved by the expert, the doctor. Having spent two sessions covering the medical aspects and seeking information from others, it is easy to continue to do so in the following sessions.

Instead there will be an attempt to address the idea that there is much a person with asthma can do on his/her own to control the asthma. This makes patients even better partners with their doctors because they realize how much of a role their own behavior can play.

For questions that come up, it is now advisable to look to the group for help with answers. If they are medical in nature, you may choose to answer them. However, for questions that are quite individualized, participants should be asked to confer with their own doctors.

Sessions 3 and 4 also introduce a new approach to self-management, the idea that a person and a family can change behavior patterns by following the principles of social learning theory. These principles are probably new to most participants, although they may have used some of them without realizing it.

Additional resources for conveying social learning principles are found in session 4. These include the flowcharts and the script for a do-it-yourself audiotape in addition to the handouts and the lecture material. Some of these activities could be used in session 3 if the leader runs out of time or if the group is ready for more material.

It may be helpful for the leader to be familiar with the information contained in two books (1) *Families: Applications of Social Learning Theory to Family Life* and (2) *Living with Children: New Methods for Parents and Teachers.* These short references are optional reading for session 3 but a must for session 4. The leader may also loan these books to parents to read.

Flowcharts are appropriate for session 3 or session 4 because the exercise stresses use of positive reinforcement and the need to break behavior into small steps. However, actual solutions to the various flowcharts can be done in sessions 4, 5, 6 or at other times when an activity is needed and the subject of the flowchart fits with the topic under discussion. The flowcharts offer a wealth of problem solving activity and can be used together in two sets as an activity of their own. Consult sample teaching script in sessions 5 and 6.

The do-it-yourself audiotape may be used in either session 3 or session 4. It may also be used instead of the Positive Reinforcement audiotape, although the Patterson tape is very useful for giving practical examples of what positive reinforcement is and how it can be applied. Consult leader background in session 4.

Although the material in session 3 seems complex, there are only a few basic points to stress:

1. The importance of positive reinforcement for fostering behavior change
2. The components of effective positive reinforcement:
   a. Reinforcing immediately
   b. Reinforcing often
   c. Reinforcing enthusiastically
3. The use and power of social reinforcers

Welcome and Review

Good to see all of you again!

Do you have any questions or comments from last week?

Do you all understand how asthma medicines work?

Do you remember why daily asthma medicines have to be taken on time?

Which inhaled medicines should not be used during an attack?

Do you have any questions about which side effects require medical attention and which ones do not?

Do your children know how to use nebulized medications correctly? Do they understand the limits for the use of inhaled bronchodilators?

Did anyone check with their doctor for the answers to specific questions?

Introduction to New Focus

Starting today, we will shift emphasis from the medical and medication management of asthma and look, instead, to the behavioral management of asthma. By "behavioral management" we mean the things a person does by himself/herself to help control the asthma.

As a consequence of this shift in focus, the way we conduct the group will change somewhat. You will be listening less and talking more. I encourage you to add your comments, feelings, and solutions to the discussion and to interact verbally with the group. There is much that we can learn from each other because you all have had much experience with managing asthma.

We will begin to concentrate on how our behavior, the behavior of the child with asthma, and the behavior of family and friends affect the management of the asthma. We will begin to look closely at our own experiences and on ways in which behavior patterns can be changed in order to improve control of the asthma for the child.

why social learning theory

To help us through this process, we will first cover some techniques for helping people to learn new behaviors. These belong to a group of learning principles called social learning theory. We will then apply rules to our own lives and come up with ways to learn new habits in relation to asthma.

Why do we spend time on the basic concepts of learning? For several reasons:

1. Both parents and children must learn the basic skills involved in asthma self-management.

2. We must learn new habits to replace old habits.

   Often parents and children get into power struggles and bad habit patterns. These may affect the management of the asthma. These patterns can be changed by learning new behaviors. By applying the principles of social learning theory, we can learn new behaviors and help our children to learn new behaviors.

3. Your children are learning attitudes about themselves and habit patterns of their own.

   How much a chronic illness affects a person is heavily dependent on how people close to the person react to the illness. This is particularly true for children who are in the process of forming their own behavior patterns and attitudes toward themselves. They are learning these patterns and attitudes from their parents, other role models, and their peers.

Learning affects what we do, how we do it, and what we think about it.

As part of learning how to self-manage asthma, we will take a careful look at how people learn. The goal of this group is to help parents teach their children how to be responsible for the care of the asthma. Therefore, we must know how children, how everyone, learns new skills and behavior. By understanding how we learn, we can help teach the skills of self-management more easily and more efficiently.

Audiotape: Positive Reinforcement

transition One of the ways of helping children, or anyone, learn new behavior is by positive reinforcement.

audiotape We are now going to listen to and discuss an audiotape called Positive Reinforcement. It was made by Dr. Gerald Patterson.

introduction This tape was made to help families who are involved in a program of behavioral change. It is a clear presentation of the importance of positive reinforcement.

We all use positive reinforcement every day. The tape helps us to think about what positive reinforcement is and what it is not. For some of you, the tape will be a refresher course. For others, it will offer a series of new ideas to use in your daily lives.

procedure for discussion The whole tape runs about half an hour. We will play the first side of the tape, which lasts about 15 minutes, and then stop and discuss it. We will then continue with the second side. You are encouraged to take notes as we go along and to ask any questions that may come to mind as we listen to the tape. Please write down those questions or comments and be sure to bring them up during the discussion.

for discussion at end of first half of tape

Suggested Leads and Questions for First Side of Audiotape:

What do you think of the tape?

Do any of the situations sound familiar?

Did anything in particular strike you about the tape or what was said on it?

What are the three factors in using social reinforcers effectively?

What kind of reinforcer do you think you are?

In what situations do you find it easy to be a reinforcer?

In what situations do you find it difficult?

Allow time for discussion after each question. To help the group open up and talk on these points, the leader may wish to speak a little about himself/herself as a reinforcer and to describe experiences in which it was easy or hard to give reinforcement.

Has anyone ever used a program to get a behavior change?

Would you share your experience with the group?

Again, to start discussion, the leader may wish to relate a personal example of using a behavior change program.

Some people consider some of the concepts discussed as bribery.

Does anyone here feel that way or have other negative feelings about what is on the tape?

for discussion at end of second half of tape

Suggested Leads and Questions for the Second Side of the Tape:

Do you feel any different about the last half of the tape?

Do you like it more or less than the first half?

Do you ever find yourself adding cabooses?

Do any of the examples sound familiar?

Do your children have an idea of "earning" the things that they want?

How do allowances work in your family?

Do any of you ever have a hard time deciding whether to reinforce a less than perfect behavior? What do you do? For example, what would you do if the child's bed is made, but it is messy?

How can positive reinforcement in general or reinforcement for partial behaviors be used to teach asthma self-management?

Interpreting the Examples at the End of Tape:

The examples of reinforcers at the end of the tape are to be judged by the group as either totally positive (+) or partially negative (−). The tweeter sound after each one is supposed to indicate which statement was positive and which was negative. However, sometimes it is hard to tell. The following answer key may help:

− handsome/big nose
+ good day/no fight
− hair better since cut
− can't believe/you washed
+ coat hung up
− bed made
+ good job for 7 year old

− lost weight
− not minding
+ home early
− dishes/greasy pans
+ original plant hanger
− son/teenagers on phone
+ proud/track meet

alternate group activity

As an alternative approach, begin the tape and watch the group as they listen to it. If you see a lot of puzzled expressions or strong emotions, it is time to stop the tape and to clarify or discuss the point that is being made. You may also wish to stop the tape at strategic points to emphasize main ideas. These are given in the leader background in the guide to the audiotape. Use whatever method fits your teaching style or the style of the group. The main ideas in the guide to the audiotape are summarized below.

***for emphasis** during the first half of tape*

Points to Stress During the First Half of Tape:

1. Social reinforcers
2. Importance of reinforcing—
    - immediately
    - enthusiastically
    - each time
3. Social reinforcers are expressions of love that are given after a behavior is performed.
4. Use variety in reinforcers.
5. Find a *part* of the behavior to reinforce.
6. Label the behavior you are reinforcing.
7. Some people are intuitively good reinforcers. However, most of us consciously must think about reinforcing.
8. Examples of social reinforcers
9. Change comes slowly. Don't expect miracles.
10. Be consistent:
    If two parents at home, both should participate.
    Both also should agree on the "program."
    Both should reinforce consistently.
11. When behavior is achieved, it is not necessary to reinforce every time.

***for emphasis** during the second half of the tape*

Points To Bring Out in the Last Half of the Audiotape:

1. If you are reinforcing, avoid adding a caboose or a zap. A caboose is a nastie at the end of a reinforcer. A zap is a put down. Either takes away from the reinforcer that was just given.
2. Even if the behavior is not perfect, you can still offer a reinforcer. A good reinforcer can honestly reinforce some part of the other person's behavior and does not immediately pick at the parts that are less than perfect.
3. Be specific about the part of the behavior that is being reinforced, even if the rest is not quite up to par. You can comment later about what still needs to be changed.
4. Be sure to continue to reinforce the behavior in order to maintain its frequency. This helps you to shape and make your own world rather than have it be made for you randomly by whatever happens.

Situation Cards

uses

If discussion of the tape seems to be going nowhere and an icebreaker is needed to start interaction, use the situation cards. These cards channel discussion to the behavioral aspects of asthma management.

The situation cards help parents work out ways to alter unfavorable situations using positive reinforcement or other aspects of social learning theory.

procedures

Pass out situation cards. Give one to each participant.

Allow time for participants to think about each situation and how to deal with it.

Consult the leader background material for more details on how to use the situation cards. See Guide to Situation Cards.

Options for Activities with Situation Cards

option 1 **As leader, read aloud one situation. Then ask the group how they would solve it.**

option 2 **Have each person read aloud his/her situation. Then ask how he/she would handle it. Finally, call on the group to offer other ways of handling the situation.**

If the group is comfortable with role play, try either of these two variations:

option 3 **As leader, act out a situation with a volunteer from the group, proceeding with a dialogue that resolves some of the issues. Then ask others to offer alternative solutions or to continue the role play with you.**

option 4 **Have participants form small groups with two to three persons in each group. Have each group chose individuals to act as the characters in each situation and work out dialogue for a role play for resolving the situation.**

Reinforcement

When members respond, remember to accentuate the positive. Try to find something positive to say about the group or the individual who presents a solution. Remember, the group leader serves as a model reinforcer for the rest of the group.

Be sure to reinforce any solutions that help the child learn independence in asthma management.

Remember that there are many possible solutions to the situation card problems. Be open to the options that your group presents.

However, if a solution is not appropriate, first ask the group members for other approaches. Then be prepared to offer a more appropriate resolution if none comes from the group. It is better to ignore or downplay the inappropriate solution than to seek criticism for it.

Do-It-Yourself Audiotape on Behavior Management and Asthma

optional activity **Consult the teaching notes and leader background in session 4 for details.**

When discussing this tape, it is important to point out that there are more techniques for influencing behavior than just positive reinforcement. One of these is negative reinforcement. Negative reinforcement involves the removal of an adversive stimulus or condition. By taking away the unpleasant situation or consequences, a behavior that was formerly performed infrequently will be increased.

This tape is useful because it introduces a number of principles that can be applied to real life problem solving in the fourth session.

Assignments

As an assignment during the coming week, I'm going to ask each of you to keep track of how often you reinforce another family member. Keep a list of the person, the circumstance, and what you said. We will talk about these next week.

▮ **Refer to the handout Learning Behavior given last session.**

This is an important handout. If you have not read it, please read it during the week and bring it with you next time. Write down any questions or thoughts that come to mind as you read it.

It explains the key principles of social learning theory. We will discuss it in depth next week, so be sure you are familiar with it.

▮ **Distribute copies of *Living with Children* and/or *Families*.**

optional activity For those of you who have time, these books will explain in more detail the practical applications of social learning theory. Some useful real life examples are included. These copies may be borrowed until next week. Please bring them with you when you come next time.

closing Thank you for coming.
See you next week!

A GUIDE TO THE POSITIVE REINFORCEMENT AUDIOTAPE

Important Points from the First Half of the Tape

1. This tape is largely about social reinforcers. Examples of social reinforcers include hugs, pats, spending time with the person, praise, interest in activities, and similar interactions.
   a. Important points about social reinforcers (SR):
      - SR should be given *immediately* after the desired behavior.
      - SR should be given *enthusiastically* after the desired behavior.
      - SR should be given *each time* the desired behavior occurs.
   b. Patterson makes the point that he is really talking about love—giving expressions of love that are contingent upon certain desired behaviors: First, behave or act as I want you to, then I will reinforce you for that behavior.
2. Use variety in giving reinforcers; we all get bored with hearing the same thing all the time. Also, reinforcers lose their potency after a while.
3. Whenever possible, find some part of the behavior being learned to reinforce and be sure to encourage the person to continue to try.
4. Label the behavior you want to reinforce. We all need to know specifically what it is that we do well or correctly, especially when we are trying to change something.
5. Some people are intuitively good reinforcers. But most of us need to consciously think about reinforcing behaviors that we wish to see changed.
6. Some people cannot accept reinforcement. They neutralize the effect of the reinforcer that we gave them. It is helpful to label their behavior for them, "That's a throw-away."
7. Examples of reinforcers other than praise include:
   a. Asking someone a question about their activity.
   b. Showing interest in their activity.
   c. Joining in their activity for a minute.
   d. Bragging about their newly acquired behavior to someone else, in the presence of the person being bragged about. This is one of the most powerful reinforcers.
   e. Using humor in ticklish situations, or for variety.
8. Behavior changes slowly. Don't expect miracles.
   a. Because each response should be reinforced to learn a new behavior, change may be slow in coming.
   b. If there are two parents in the home, both parents should participate.
   c. When the new behavior is learned fairly well, it is not necessary to reinforce each time the behavior occurs.
9. Parents should agree on a "program" which is a plan of action or method to change a behavior using positive reinforcement. This program defines which behavior is to be changed and what the rewards will be for the change.

Important Points from the Second Half of the Tape

1. But the behavior isn't perfect.

   a. Avoid adding a "caboose" or delivering a "zap." A "caboose" is adding a "nastie" on the end of a reinforcer. A "zap" is a put-down. "You're wearing a nice dress, for a change." "For a change" is a caboose. It takes away from the reinforcer that was just given. Instead of using cabooses, reinforce first: "You're wearing a nice dress." At some later time, make a suggestion about the behavior that you'd like to see changed. For example: "That dress looked so nice on you. Can you wear it again some time?"

   b. Behavior does not have to be perfect to warrant a reinforcer. Sincere steps in the right direction count! The "art" of being a good reinforcer probably lies here. A good reinforcer is able to honestly reinforce some part of the other person's behavior and does not immediately pick at the parts that are less than perfect. It's the old "accentuate the positive" bit. This does not mean exaggerate the positive or praise behavior that isn't deserved. Let the reinforcer stand by itself.

   c. Be specific about what is being reinforced. Label the thing or behavior being commented upon. "I'm glad you made your bed before you came to breakfast." This could be said even if the job was less than perfect. Next time, show how to make the bed more neatly.

2. Changing behavior can be a slow process. If rapid behavior change is desired, set up a point program that focuses and gives rewards for specific behavior changes. Points are collected and traded in for reinforcers.

3. Examples of how reinforcers can be delivered are covered at the end of the tape. Beware of the tweeter, sometimes it seems unclear. The following guide identifies which statements were positive and which were not.

   a. − handsome/big nose
   b. + good day/no fight
   c. − hair better since cut
   d. − can't believe/you washed
   e. + coat hung up
   f. − bed made
   g. + good job for 7-year-old
   h. − lost weight
   i. − not minding
   j. + home early
   k. − dishes/greasy pans
   l. + original plant hanger
   m. − son/teenagers on phone
   n. + proud/track meet

4. Being reinforcing and contingent are not one-time things. You are responsible for maintaining the new behaviors. Being reinforcing and contingent helps you shape and make your own world rather than having it made for you randomly by whatever happens. Allow your child to earn the right for something that he/she wants, similar to earning wages. This allows him/her to ask for changes in the social environment. That way the world is more predictable and dependable for both of you.

GUIDE TO SITUATION CARDS

Each situation card contains a written description of a situation or dilemma that the reader is asked to resolve. The cards can be used in several sessions to help clarify the concepts of positive reinforcement, natural consequences, and other elements helpful in teaching new behaviors. They can be used as an ice-breaker, a discussion starter, or as clarification of points that have already been made in another way.

The leader may choose to "act out" a situation with a volunteer to help the group warm up to the idea of roleplaying. After the first situation is roleplayed a discussion can follow, or the leader may choose to pass out the rest of the cards to have the group try the roleplaying immediately. When the whole group is involved in the roleplaying, it is helpful to split up couples in the group, and to allow the groups a few minutes to discuss their dialogue before you ask them to present it.

There are other ways in which the situation cards can be used. The leader may choose to read a preprepared dialogue for a situation that illustrates a concept which the leader feels is important. A discussion on the dialogue can then take place.

The leader may also choose to read a situation card aloud to the group and ask them how they would continue the dialogue or resolve the dilemma. The following discussion should point out the different ways that families have found to handle similar situations.

The leader should feel free to use the cards as he or she feels fit. Different methods will work with different groups. Experiment. However, when using the cards, it is important to:

1. Find ways to reinforce the solutions or resolutions that help the child learn independence for his/her asthma management.
2. Ask the group for comments when you see a solution that is not appropriate. Then be prepared to model a more appropriate solution if necessary. Use questions and leads such as "Does anyone see another way to handle the situation?" It is better to ignore or downplay the inappropriate solution than to seek criticism for it unless the group is very supportive and open to such criticism.
3. Remember that there are many possible solutions to the card situations. Before you use them, go through and decide how you would react to each situation. Then during the discussion, be receptive to other options that are presented.
4. Accentuate the positive at all times. Try to find something positive to say to each group or individual who presents a solution. You serve as a model reinforcer to the rest of the group.

To use the situations for class discussion, photocopy problems and paste each on a large index card.

SITUATION CARD PROBLEMS

1. Seven-year-old Susan comes home from school upset and angry. "I can't do anything. Everytime I start to play a game at school, I start to wheeze and my teacher makes me stop. I'm so sick of having asthma. I HATE it."

   What would you say or do for Susan?

2. Your 8-year-old son comes home and tells you that he started to wheeze in gym class and told the teacher that he needed to rest and get a drink before he could play anymore.

   What would you say to your son?

3. Jack, your 9-year-old, is usually good about taking care of his asthma. Today after school, he announces that he's going to play soccer with his friends. He has been dragging for the past two days and you think he's building for an attack. You suggest that he not play hard. His response is, "Oh, Mom," as he runs out the door. Half an hour later, he comes back wheezing audibly. You get mad, "I told you to be careful. I just knew that you'd get sick." Jack goes and gets some water and sits on the couch to rest.

   What would you say to continue the dialogue?

4. Your 11-year-old daughter comes home and tells you about her gym teacher. "She wouldn't let me stop to rest when I started to wheeze today. She just wants to see me get sick. I hate her!"

   What would you say or do?

5. You and your son Don meet with Dr. Smith for Don's checkup. During the checkup, Dr. Smith hurriedly tells the two of you about some new medicine that he is going to try with Don. Dr. Smith is very rushed today, and you realize that you don't understand his explanation or directions about the new medicine.

   What do you do or say?

6. Your son has just left for the school bus stop in the morning. You realize that he has left his noon medicine sitting on the breakfast table. You have been working on his remembering to take his medicine on his own. Your part of it is to set it on the breakfast table by his plate, which you did. His part is to pick it up and put it in his gym bag before he leaves. This is what he forgot.

   What would you do in the situation?

7. Your child's gym teacher comes up to speak to you at your son's Back to School Night. "Mrs. S., I've wanted to talk to you about Steven's asthma. I never know for sure what he can do and what is too much for him. He tries so hard sometimes, I'm afraid he pushes himself too much."

   What would you say or do?

8. You are awakened at 2 a.m. and hear your son wheezing. Usually your wife/husband wakes and gives John his medicine before you hear him. This time she/he is sleeping soundly, so you get up and give him the medicine and sit with him for awhile. On your way back to bed, you realize that getting up and sitting with John really interrupted your night's sleep.

   What would you say to your wife/husband in the morning about the situation?

   How could the situation be handled more equitably?

   What else can be done to facilitate taking nightly medication?

   How can the child become more involved?

Introduction to the Social Learning Theory

In our daily lives all of us use self-management skills. That is, we assume responsibility for daily tasks such as grocery shopping, going to work, paying bills, and brushing our teeth. People with asthma need even better self-management skills than the average person because these skills affect their health. An important part of asthma management is self-management. Specifically, this means that the person with asthma must learn to assume as much responsibility for asthma management as his/her maturity will allow. This responsibility includes knowing the medicines to be taken, remembering to take those medicines on time, being able to recognize and act on early signs of an asthma episode, and learning how to adjust activities in order to avoid breathing problems.

But, how do we start helping someone learn these skills? When we learn to do something new, we need encouragement and support. Few of us learn or experiment if we are ignored or if we get negative responses from those around us, especially from those important to us. This is a principle that we all know from common sense and experience.

The Social Learning Theory is a system for helping someone learn a new skill. Its principles are neither new nor magical. They are time-proven ideas that are organized in such a way that they can be consciously and consistently applied. The following is a brief description of these learning principles. The examples given refer to teaching children new skills and behaviors but the principles apply to persons of any age.

Principles of Social Learning Theory: Positive Reinforcement, Small Steps, Specific Goals

Positive Reinforcement

Positive reinforcement, which is the backbone of the Social Learning Theory, helps people learn and encourages them to try new things. Some examples of positive reinforcers are smiles, a pat on the back, attention, an encouraging word or look, and praise. We all need and thrive on positive reinforcement. Unfortunately, though, most of us need to practice giving positive reinforcement. If something makes your child feel genuinely good, rather than guilty, ashamed, frustrated, or angry, then it's a reinforcer. The following describes how to use positive reinforcement:

- Reinforce Immediately. Positive reinforcement is most effective when given immediately after the desired behavior has occurred. Your child will make the connection between the behavior and the reinforcement more easily if there is no lag time. The desired behavior will then be more likely to be repeated. For example, your daughter has been coming home late for dinner but tonight she is on time. Tell her as soon as you see her that you are proud of her for coming in on time. Don't wait until hours later. The reinforcement will have lost some of its "oomph" by then.
- Be Specific. It's important that your child knows why he/she is being reinforced. If your son remembers his morning dose of medicine, tell him that it's great that he remembered his early meds. This way, there is no confusion about what he did that you think is great. If you hadn't been specific, he may have thought that you were congratulating him for getting up on time.

- Reinforce Often. If your child is trying to learn a new behavior or skill, he/she will need encouragement often, especially at first, to help build confidence and pride as he/she learns. As the new skill or behavior becomes habit, the amount of positive reinforcement can be reduced. It's important, however, to step up the reinforcement if the desired behavior begins to weaken. Helping your child learn takes consistent and diligent effort but the payoff is less nagging, fewer arguments, and a happier, more independent child.

Small Steps

Each skill is made up of many small steps. You must learn to crawl before you can walk. But before learning to crawl you have to learn how to kneel on all fours, and before that, to sit up, and before that, to roll over, etc. The Graduated Length Method of teaching someone to ski is a widely used example of learning in small steps. First the pupil learns to balance and control very short skis. As the level of skill improves, longer and longer skis are used until eventually the pupil is able to control skis of normal length. Cleaning a child's room is made up of many small tasks: putting toys away, picking clothes up from the floor, making the bed, dusting, vacuuming.

Specific Goals

Describe the final goal in detail. A small child may not be able to understand what you mean by the thundering cry: "Clean Up Your Room!" "Clean" is a very general term and each of you is likely to have different meanings for that demand. To your child a clean room may mean toys out of the middle of the floor and the bedspread pulled up over the pillow. But if you make up a list of what you mean, either with pictures or in words, to give your child specific reminders to go by, you are more likely to understand each other. For example, tell him/her that shoes should be in the closet, dirty clothes in the hamper, clean clothes folded and put away, and the bed made. Be sure that your child knows what you mean by "dirty" and how to comply with items on the list. For example, he/she must know the basic skills needed to fold clothes and make a bed.

Example: Helping Your Child Take Over Asthma Self Management Tasks

The following example illustrates how to apply the principles described above to teaching a child to manage his/her medication. When one step is learned well, move on to the next one until the final goal is achieved.

Step 1: *The child learns to identify shape, size, and color of the medications to be taken.* To teach your child what Slo-Phyllin looks like, for example, show him/her that it is purple, shiny, oval like a football and larger than an M & M candy. Have your child repeat each characteristic after you and reinforce him/her after each part that is correctly remembered.

Step 2: *The child learns the names of the medications he/she is taking.* It may be helpful to work out with your child gimmicks for helping him/her remember these strange names. For example Slo-Phyllin could be broken down to "slow," "fill," "in," words your child already knows. Again, have your child repeat the name and reinforce him/her when it is correctly remembered.

Step 3: *The child is able to verbalize the times and situations when the meds are to be taken.* For example, evening meds are to be taken at 8:00 p.m., which is bedtime. Reinforce correct responses. (Helpful Hint: Each time the medications are taken, have the child make a mark on a daily calendar. This will not only serve as a kind of reinforcer but also a check that the meds for that time have been taken. At the end of the day, if medications are to be taken four times a day, for example, there should be four marks on the calendar for that day.)

Step 4: *The child takes the medications under your close supervision according to a routine you set up with your child.* For example, you put the morning pills in the middle of the breakfast plate. Before the plate can be filled with food, the medicine must be taken. Your child can say something like "Okay Mom, I'm taking my pill now." Parent watches and reinforces when the medication is taken.

Step 5: *The child goes to you and asks for his/her medicine at the proper time.* You give the child the medicine and watch while it is taken. Reinforce.

Step 6: *The child takes you to the medicine bottle and takes out his/her dosage.* He/she takes the medicine in front of you. Reinforce.

Step 7: *The child gets the medicine him/herself.* After 2 weeks or so of consistently remembering and getting the correct medicine without constant reminding, he/she is ready for this step. For the next three times, supervise again. If there are no problems, continue gradually tapering off your supervision. Reinforce.

Step 8: *The child is taking medicine completely on his/her own.* The child is praised for dealing with his/her own medication responsibility.

Step 9: *The child anticipates problem situations such as vacations, changes in school routine, spending the night with a friend, etc.* If necessary, help your child develop a method for remembering the medications at unusual times.

Hints: If some of these steps are too large for your child, break them down into smaller ones. If a new skill is not sticking, go back to the previous step and try again. Remember to reinforce *often* and *immediately* after the desired behavior.

Helpful Hints and Possible Pitfalls

1. Whenever possible, ignore a behavior you do not like. An undesirable alternative is nagging, which is not only miserable for all involved, but is also unsuccessful at helping someone learn a new skill or behavior.
2. Do not debate or argue with your child about what you expect or about the consequences if those expectations are not met. This turns into a power play and the result is usually anger, not change.
3. Discuss with your child what you are trying to do and why. Be sure that each step along the way is explained so that your child will know what to expect as well as what is expected of him/her. Caution: It is easy to let yourself get caught up in an argument at this point. If one begins to develop, say what you mean and then drop it and walk away.
4. Provide natural consequences whenever possible. We all feel freer to learn and try new things if we know what to expect. It makes more sense to let your 7-year-old go outside and play kickball with his friends than to tell him no because he might wheeze. If he overexerts himself, which he may not do, wheez-

ing would be the natural consequence. In this way he will learn for himself that his actions will result in logical consequences.

5. Change is slow. Try not to get impatient if the desired behavior is a long time in coming. It has taken a long time for your child's current habits to develop. It will take a long time for new ones to take their place.
6. For small children especially, provide a certain amount of time for them to get ready before there is something you want done. Example:

   Right Way: "Bedtime is in 15 minutes. Start finishing up the game."
   Wrong Way: "Put away the game. It's time for bed."
7. Be consistent when setting up and enforcing rules and expectations. Again, knowing what to expect will help your child succeed.
8. Reinforcers besides the "social" ones above can also be used. They include such treats as later bedtime, food, TV time, money, prizes, etc. Never use these, however, without also using the social reinforcers at the same time. The social ones are the most powerful. There is no substitute for personal attention.
9. Be sure that the reinforcers you use are meaningful for your child. If you think they are great ones but your child is not responding to them, pick new ones together.
10. It's often easier and faster to do yourself whatever it is you are trying to have your child learn to do. Fight this urge. The more chances your child gets to practice, the faster he/she will learn.
11. Think about something that you enjoyed learning. See if you can pick out the factors that made the learning experience a positive one for you and apply those concepts when helping your child learn.
12. If your child is not learning the skills and behaviors you are working on, go through this checklist and see if you are *consistently* doing each of the following:

    ____ a) Stating clearly and specifically to your child what your expectations are.
    ____ b) Giving positive reinforcement immediately and often for desired behavior.
    ____ c) Using reinforcers that are meaningful to your child.
    ____ d) Setting up small steps to reach the final goal.
    ____ e) Providing natural consequences for undesired behavior.
    ____ f) Following through on the consequences when the desired behavior is not achieved.
    ____ g) Ignoring undesirable behavior as much as possible; that is, not reinforcing it by paying attention, even negative attention, to it.
    ____ h) Being consistent about what you expect of your child.

SITUATION CARD PROBLEMS

1. Seven-year-old Susan comes home from school upset and angry. "I can't do anything. Everytime I start to play a game at school, I start to wheeze and my teacher makes me stop. I'm so sick of having asthma. I HATE it."

   What would you say or do for Susan?

2. Your 8-year-old son comes home and tells you that he started to wheeze in gym class and told the teacher that he needed to rest and get a drink before he could play anymore.

   What would you say to your son?

3. Jack, your 9-year-old, is usually good about taking care of his asthma. Today after school, he announces that he's going to play soccer with his friends. He has been dragging for the past two days and you think he's building for an attack. You suggest that he not play hard. His response is, "Oh, Mom," as he runs out the door. Half an hour later, he comes back wheezing audibly. You get mad, "I told you to be careful. I just knew that you'd get sick." Jack goes and gets some water and sits on the couch to rest.

   What would you say to continue the dialogue?

4. Your 11-year-old daughter comes home and tells you about her gym teacher. "She wouldn't let me stop to rest when I started to wheeze today. She just wants to see me get sick. I hate her!"

   What would you say or do?

5. You and your son Don meet with Dr. Smith for Don's checkup. During the checkup, Dr. Smith hurriedly tells the two of you about some new medicine that he is going to try with Don. Dr. Smith is very rushed today, and you realize that you don't understand his explanation or directions about the new medicine.

   What do you do or say?

6. Your son has just left for the school bus stop in the morning. you realize that he has left his noon medicine sitting on the breakfast table. You have been working on his remembering to take his medicine on his own. Your part of it is to set it on the breakfast table by his plate, which you did. His part is to pick it up and put it in his gym bag before he leaves. This is what he forgot.

   What would you do in the situation?

7. Your child's gym teacher comes up to speak to you at your son's Back to School Night. "Mrs. S., I've wanted to talk to you about Steven's asthma. I never know for sure what he can do and what is too much for him. He tries so hard sometimes, I'm afraid he pushes himself too much."

   What would you say or do?

8. You are awakened at 2 a.m. and hear your son wheezing. Usually your wife/husband wakes and gives John his medicine before you hear him. This time she/he is sleeping soundly, so you get up and give him the medicine and sit with him for awhile. On your way back to bed, you realize that getting up and sitting with John really interrupted your night's sleep.

   What would you say to your wife/husband in the morning about the situation?

   How could the situation be handled more equitably?

   What else can be done to facilitate taking nightly medication?

   How can the child become more involved?

PARENTS' SESSION FOUR

BEHAVIOR TERMS AND TECHNIQUES USEFUL FOR ASTHMA SELF-MANAGEMENT

GOAL

- To familiarize the participants with the basic behavioral terms and techniques that can be used to help the behavioral control of asthma.

RESOURCES

Leader Background Material:
  Effectively Changing Children's Behavior
  Explanation of Behavioral Terms
  Steps in Instituting Behavioral Change
  Situation Cards: Problems to Use in Planning Behavioral Programs
  Children: The Challenge, by Rudolph Dreikurs and V. Soltz*
  Families, by Gerald Patterson*
  Living with Children, by Gerald Patterson*
  Learning Behavior: Introduction to Social Learning Theory (see Session 3)
  Do-It-Yourself Audiotape: Behavior Management and Asthma
  Sample Weekly Asthma Diary

Handouts:
  Learning Behavior—This should have been given out in a previous session. Have extras for those who were absent or lost theirs.
  Explanation of Behavioral Terms
  Steps in Instituting Behavioral Change
  Problems to Use in Planning Behavioral Programs
  Flowcharts
  Report of Asthma Episode/Attack
  Weekly Asthma Diary

*Ordering Information:

Children: the Challenge, Rudolph Dreikurs and V. Soltz, 1964, $6.95/copy.

Order from:
Hawthorn-Dutton Publishers
2 Park Avenue
New York, New York 10016

Families: Applications of Social Learning to Family Life, Gerald R. Patterson, 1975, $9.95/copy.

Living with Children: New Methods for Parents and Teachers, Gerald R. Patterson, 1976, $8.95/copy.

Order from:
Research Press
Box 317720
Champaign, Illinois 68121 Phone: (217) 352-3273

ACTIVITY LIST

Topic/Activity	Leader Background	Handouts
Welcome and Review		
Discussion of Introduction to Social Learning Theory	Learning Behavior *Families* *Living with Children*	Learning Behavior
Terms and Techniques in Behavior Change	Explanation of Behavioral Terms *Families* *Living with Children*	Explanation of Behavioral Terms
Steps in Instituting a Program of Behavioral Change	Steps in Instituting Behavioral Change *Families* *Living with Children*	Steps in Instituting Behavioral Change
Situations: Planning a Program of Behavioral Change	Changing Children's Behavior Situation Cards *Families* *Living with Children* *Children the Challenge*	Situation Cards: Problems to Use in Planning Behavioral Programs

Optional Activities	Leader Background	Handouts
Do-It-Yourself Audiotape: *Behavior Management and Asthma*	Behavior Management and Asthma	*Families* (optional) *Living with Children* (optional)
Flowcharts	See Sessions 4, 5, 6.	Selected Flowcharts from Sessions 4, 5, 6.

PARENTS' SESSION FOUR

BEHAVIORAL TERMS AND TECHNIQUES—TEACHING NOTES

Orientation for the Leader

Session 4 is a continuation of the discussion from the previous week and again focuses on techniques for behavior change. Specific new points from the Learning Behavior handout and the background for session 4 should be brought out and discussed.

Sessions 3 and 4 are quite fluid, with the instructor presenting the information in a manner and approach that is compatible with the existing value system of the participants.

It is important to get across the idea of using behavioral management to encourage independence and responsibility for asthma management. Remind the group that it takes time to change behavior and exhort them not to become discouraged if change is not immediate.

The information contained in the two books *Families: Applications of Social Learning Theory to Family Life* and *Living with Children: New Approaches for Parents and Teachers* are vital to the understanding of the messages in this session. The leader should read these books before the session and may wish to have parents read *Living with Children* as well. Loaning copies to parents at the end of the third session may be advised.

The material on behavioral terms and techniques may be presented in a variety of ways. If you feel comfortable lecturing, a suggested content is given in the teaching notes. However, the leader may also present the information from an outline of the background material or the content of the resource books. Alternatively, a point-by-point discussion of the handout may work if the group reacts well to this method. Yet a third approach would be to briefly review the handout and then emphasize the main points during a group exercise with the flowcharts or the do-it-yourself audiotape. It is up to the leader to use the available resources creatively; he/she is free to devise group dynamics of his/her own in order to convey the information.

Situation cards for planning a program of behavioral change are an essential part of the session. If they are distributed to participants, the leader must prepare the cards in advance.

An optional audiotape covering many of the techniques of social learning theory as they relate to asthma is included in the leader background. If the leader wishes to use this, he/she should record the script provided in the leader background using friends or volunteers as the respondents.

Flow charts are included as another optional activity. This is especially useful for helping participants to break down behavior into small parts and for making decisions about behavior change strategies. If the leader wishes to use this activity, a script and leading questions are given in the teaching notes. A more in-depth coverage of the flow charts is given in the background of sessions 5 and 6, and the leader should consult those two sessions as well.

Although the material in session 4 seems complex, there are only a few basic points to stress:

1. The need to break behavior into small steps
2. The steps in planning a program of behavior change
    a. Pinpointing
    b. Tracking
    c. Devising small steps to change in the behavior
    d. Reinforcement for changed behavior using meaningful reinforcers
3. The use of social learning principles to normalize family life by applications to the child and siblings in areas related and not related to asthma.
4. The need for parents to act consistently when applying behavioral change techniques.

Welcome and Review

Welcome back to our parents' asthma self-management group.

I hope you have been thinking about situations related to asthma management that you would like to change and how you would go about doing so.

Any questions or comments from last week?

Who remembered to track the number of times they gave positive reinforcement to someone?

Give positive reinforcement to those who did remember.

Any comments about the experience?

Do you find it easy to give reinforcement?

Did you find it easy to keep track of giving reinforcement?

What kind of behaviors did you try to reinforce?

Did you find that you use one type of reinforcement more than another?

Do you tend to use hugs rather than verbal praise or special treats rather than smiles?

How do you feel about giving positive reinforcement to family members when you do not receive positive reinforcement from them?

Did you see any improvement in the behavior you tried to reinforce? If not, why do you think there was no change?

Remind participants that it takes time to change behavior and that things may not change immediately.

Do you remember the four rules for effective use of positive reinforcement?

Review the need to reinforce
1. **immediately**
2. **a specific behavior**
3. **often**
4. **small steps that lead to the desired behavior**

Any other comments about the experience?

Discussion of Introduction to Social Learning Theory

Try to elicit a discussion from participants about the handout. Allow time for discussion after each question.

I hope all of you read your assignment last week!

Do you have any questions about specific points?

Did anything surprise you about the handout?

For those of you who did not get a chance to read it, let's go over the main points.

Have you ever tried any of the techniques?

Let's look at the section on helpful hints and possible pitfalls. Have you had experience with any of these?

Review the ideas about:

1. Ignoring undesirable behavior
2. Avoiding debate or argument with the child if your expectations are not met
3. Giving clear explanations so the child knows exactly what is expected and why; giving short instructions and leaving the scene before an argument or power play develops
4. Allowing natural consequences
5. Being patient and allowing time for large changes in behavior to take place
6. Providing a specific time limit for a specific small behavior to take place
7. Being consistent in setting up and enforcing rules
8. Considering both social and nonsocial reinforcers
9. Being sure the reinforcers are meaningful to the child
10. Letting the child do things for himself/herself and not rushing in to help right away
11. Thinking about the factors that made different learning situations enjoyable for you and applying those conditions for your child

After each one, ask parents how they might apply each factor to a situation related to the child's or another family member's reaction to asthma.

Alternatively, you may ask how that factor could be applied to a particular aspect of general behavior for the child with asthma or for siblings. Some children with asthma are either overprotected or under disciplined and the techniques may be helpful for normalizing family life in areas other than the asthma.

transition

Have any of you used a planned program to get a behavioral change? What was it like? Did it work? How did you feel about it?

Allow time for responses and discussion.

To help you understand what is involved in a behavioral change program, today we will go over some additional techniques and concepts from social learning theory.

These may help you in childrearing efforts for asthma related behavior and for other behaviors as well.

Terms and Techniques in Behavioral Change

Basic information for a lecture is offered here. The concepts may also be stressed during class use of the flow charts or the do-it-yourself audiotape.

Tracking

When we are trying to figure out what is going on in a situation, when we are unsure just how often something is happening, or if we want to discover what factors affect an outcome, it helps to track the behavior or situation.

The principle of tracking is used when your children fill out their asthma report forms or when you record the exact times your child takes his or her asthma medicines.

Our memories are often faulty. Something may seem to be very good or very bad, always or never. Also, when we become very familiar with a behavior that occurs frequently, we often do not pay attention to the specific number of times it happens and may not notice when a change occurs. We must remember that the reality of a situation may be far from the impressions we hold. The only way to find out is to keep track. This involves keeping accurate, written records.

A method of tracking should be chosen that makes it easy to keep complete and accurate records. For example, a chart hung in a prominent place, an index card carried in your pocket, or a golf score marker on your wrist.

Tracking is often used by persons in formal behavior change programs such as programs to quit smoking. Recording the exact circumstances can help you discover why certain behaviors occur and can give insights into ways of changing them. Tracking is helpful for anyone who wants to break a habit.

To be truly helpful, the records should be kept consistently. They should be kept before your program begins to see what the baseline pattern is, during the behavioral change program, and some time after the program to see if the program has made a difference.

Pinpointing

To pinpoint means to define a problem precisely. You have to have a clear idea of what the problem is, why it is occurring, and what factors are involved. Then you can, again, pinpoint or plan ways in which things can be changed. This will give you steps to work on or strategies to try.

Natural Consequences

The concept of the natural consequences is a childraising principle in which the logical sequence of events is allowed to happen to the child, usually as a result of the judicious withdrawal of the parents. Thus the child is allowed to experience the physical or social consequences of a particular behavior.

If the consequences are unpleasant, the child will quickly learn not to repeat the behavior. However, if the consequences are favorable, the child may decide that the behavior, indeed, was a good idea.

Natural consequences is a very effective social learning technique. We all have heard the old saying, "Experience is the best teacher." Most children can handle the consequences of their actions or inactions. Many times the parents are wise to ask themselves, "What would happen if we did not interfere?"

Sometimes, withdrawing from the situation and letting events take their course can help a child learn best. However, there are some situations, especially those affecting the physical safety of the child, in which a parent must intervene.

Time Out

One consequence of a child's behavior may be the experience of "time out." This technique works for children from 3 to about 11 or 12 years of age. It should not be used for older children.

Time out is time away from the mainstream. It is time spent in a dull, nonreinforcing place. An empty bathroom may be a good choice.

Time out can produce rapid behavior change and is advisable when a slower method, such as positive reinforcement, will take too long to produce the desired result.

Time out is often used when a child is out of control and needs a quiet period to get back in control. It can be used for a child with asthma who is running around yelling and screaming and getting so worked up emotionally that he or she is building for an attack. Time out can also be used for siblings that are unruly in a general family situation or for siblings who interfere at a critical time during a serious attack.

There are specific procedures that have been proven effective when using time out:

1. The place selected for time out must be dull and nonreinforcing. Things that might be interesting to look at should be removed from the room before the child is assigned to time out.
2. The child should be told the reason for time out and the procedure that must be followed. The child should be told that time out is being used to help him/her refrain from doing a certain behavior and that he/she will be assigned to time out whenever the undesired behavior occurs.
3. Only a short time is required for time out to be effective. Generally 2 to 5 minutes is sufficient. Time out is not punishment, but a means of helping a child learn a new behavior.
4. A parent must remain calm throughout the time out period, especially when the initial command is given. To help the situation, the parent may set a timer.

Steps in Instituting a Program of Behavioral Change

You can use all of these social learning techniques as you help your child to perform new behaviors. Some will be related to asthma management and some will be related to other life skills.

Let's see how to put them together in a planned program for behavioral change.

If a lecture or review format is needed for your group, a summary is provided below.

steps

1. Specify or PINPOINT the goal and the problem behavior.

This involves defining exactly what behaviors you want to decrease (the problem) and what behaviors you want to increase (the goal). The behaviors chosen must be observable and countable.

2. TRACK the behaviors.

This involves just observing and keeping records of the behavior before you start the change program. This allows you to see what is going on and to see the normal frequency of the behavior.

Your recordkeeping should continue during the program period to see if the plan you have chosen is having an effect and to see if a different strategy may be more helpful.

Sometimes the tracking may be done to help pinpoint the cause of the problem behavior in the first place.

3. Plan a PROGRAM to reward desired behaviors and discourage undesired behaviors.

This includes some kind of CONTRACT or agreement about what is to be changed and what the reward will be for changing.

Part of the program is defining the STEPS that lead to the end desired behavior. It is important that the first and all subsequent steps be small and attainable.

The plan also includes the REINFORCERS that will be used. These should be changed if they are not meaningful to the person being reinforced.

4. To initiate the program, make sure all persons involved understand and agree to the program.

Make sure the parents as administrators hold up their end of the agreement.

5. To move the program along, continue to SHAPE toward the desired behavior.

This means rewarding behaviors that approach the goal behavior.

If there is no change in behavior, go back and analyze the program. The steps may be too large or the reinforcers not strong enough or not given promptly or consistently.

handout

Here is a handout that reviews the steps we have just talked about.

Pass out Steps for Instituting Behavioral Change. If the group seems interested or if they seem to need more clarification about terms, pass out Explanation of Behavioral Terms as well.

Situations: Planning a Program of Behavioral Change

introduction

Both children and adults learn from experience. Therefore, we will practice planning a program for behavioral change based on some sample situations related to asthma management.

We can apply the steps we just learned, draw on your experiences with children and with asthma, and recall the asthma self-management practices covered in previous sessions.

This will give us practice in using the ideas of social learning in case you may want to use them later.

review if necessary

If the group seems to need help in understanding the steps for a behavioral change program, have them read the handout. Invite them to ask questions if they wish. Ask them to use the steps in the handout as they plan their programs.

procedure

Now let's break into small groups with two to three persons in each group. Each group will be given a situation for which you will plan a program of behavioral change. Choose a leader who will present the results of your deliberations and the solutions you come up with.

Pass out cards containing Problems for Planning a Behavioral Program. Give one to each group.

Allow them 5 minutes to discuss ways to solve the problem and to come up with a behavioral change program to modify the behaviors involved. Allow more time if they need it.

If a group wishes to choose a problem from a member's experience, they may do so instead.

OK, let's have the group in front present their program. Please read the problem and then tell us how you would solve it. Also tell us how would you apply behavior change techniques.

After each presentation, ask the group for comment with the following leading questions:

What do you think of the program?

What are some things they covered well?

Do you think the program will work?

Can you think of any problems with carrying out the program?

pointers for leaders

Use the discussion period to emphasize the concepts in the background material.

As leader, be sure to point out the positive ideas that group members come up with and note each step of a program that was correctly planned. For example, the groups that pinpointed the exact behavior to be changed should be told that they did that step well.

Many will have difficulty in breaking a program into small steps. They will need help recognizing when a step is too large. They also will need a reminder to positively reinforce each small step as the behavior is displayed.

As always, reinforce parents for using common sense and for caring about their children.

Be aware that there is more than one acceptable way to solve the problem. What is right for one child may not work for another.

Do-It-Yourself Audiotape on Behavior Management and Asthma

preparation of tape

Before the session, enlist volunteers to play the parts of the Moderator, Mrs. Jones, Mrs. Smith, Mr. Jones, and Mr. Smith. Follow the script in the leader background. Have them rehearse reading their parts in a clear, expressive fashion, and record the content of the script on a cassette audiotape.

Early in the recording session, play back parts that have just been read to check for the quality and clarity of the sound.

Before the session, review the script and make notes in the left margin about points you wish to stress. Use these notes to locate cues in the storyline for stopping the tape and making comments of your own.

introduction

To introduce you to behavioral techniques and their applications to the self-management of asthma, we have prepared a tape of conversations between two sets of parents and a discussion moderator. It takes place in an asthma self-management group similar to our own.

The moderator introduces various terms and techniques related to behavior management and the parents comment on applications to asthma and childrearing in general.

discussion procedure

Please listen to the tape and jot down notes about points that are new to you and any comments or questions you may have. Also be thinking of ways the techniques might be applied to asthma management in your family.

Please feel free to interrupt and offer a comment or a question after any of the "actors" in this story have finished speaking. I am certain that all of you have examples of how you have used these techniques to alter your child's behavior.

Play the tape. Interrupt at strategic points to emphasize certain concepts. Choose ideas that you think are important to get across or respond to participants comments. As before, when you see puzzled expressions or people jotting down notes, these may be times to stop the tape and engage in a short discussion.

If little discussion is forthcoming, simply play the tape and explain that the material will be covered in greater detail in the resource books *Living with Children* and *Families.* Offer to lend participants copies to read during the remainder of the course if they are interested.

Flow Charts for Learning Asthma Self-Management Behaviors

orientation

The use of three types of flow charts to analyze behavior and break it into small steps can be introduced in session 4.

They are important tools to aid parents in seeing problems as fixable and in beginning to apply techniques of social learning to change behavior.

The solutions to specific flow charts depend heavily on parents being familiar with the material on antecedent conditions and concurrent conditions in session 5 and 6. However, parents who have a good grasp of the basic concepts of early warning

signs, attack management steps, triggers, and medication compliance from sessions 1 and 2 should also be able to handle the charts as well.

The important part for session 4 is to teach parents how to use the charts to analyze behavior and break it into small parts. This is an important skill to learn. Once the basic idea is conveyed, the leader may select charts from session 5 or 6 that are pertinent to the needs of the group to solve. The remaining problems may be covered in the later sessions.

introduction

The ability to analyze behavior and break it into small parts is an important skill to learn. These flow charts will assist you in this process. Once you see behavior as a series of steps that can be rearranged, you can begin to notice where you can apply social learning techniques to alter behaviors or situations that need fixing.

Distribute flow charts a, b, c, d.

flow chart type 1: a behavioral chain

The first type of flow chart is a behavior chain, as illustrated in generic chart a. It depicts behavior as a series of steps that are linked together in a sequence. After an individual performs one behavior, he/she moves on to a second, and a third and so on until the chain is complete. The key to solving a behavior chain is to decipher what step leads to the next.

parents fill in a behavioral chain

To illustrate how a flow chart works, write "Asthma Attack" as the final link in the chain in chart a. Now, think back and try to recall if you or your children exhibit particular behavioral patterns or physical signs prior to an attack. Write in the steps for your situation.

examples

Charts b through e illustrate actual examples provided by children and their parents. Charts b, c, d depict chains that do not employ self-management steps. Chart e depicts a chain that does.

flow chart type 2: comparison of behavioral chains

The second type of chart shows two behavioral chains side by side, as found in generic form in chart f. This type of flow chart allows you to compare appropriate and inappropriate behavior chains. You can examine the inappropriate chain and decide where to change it and to substitute new behaviors to fashion the new, more desirable chain of events.

example

Chart g compares appropriate and inappropriate ways of responding to an asthma attack. On the left is an appropriate chain that contains steps consistent with the self-management practice of early awareness and treatment. On the right is an inappropriate chain that contains steps that ignore early action and treatment. The two chains also compare expensive and nonexpensive ways of managing attacks.

Here, in chart g, the incipient attack worsens because treatment has not been initiated. Then, instead of administering available treatment, the youngster's parents start to argue over how the episode might be treated. Perhaps, the mother wants to follow instructions provided by the doctor; her husband may argue that the asthma is not serious and will go away on its own accord. In the meantime, the attack continues to worsen. Finally, the parents initiate treatment by giving medications to the youngster. As noted, however, they failed to keep an adequate supply of the medications on hand; therefore, their treatment is ineffective. The final link in the chain depicts the outcome of this attack: the child is rushed to the hospital emergency room with a severe asthma attack.

As an alternative, the leader may choose to narrate a different comparison chain from the examples in session 5 or 6, or may create comparison chains for a situation that reflects the experiences of the participants.

optional examples

Chain h depicts the appropriate vs. inappropriate ways a child with asthma responds to an attack. Chains i through k illustrate various ways in which parents and siblings can respond to asthma. Inappropriate chains appear on the left.

optional group activity

Parents may be asked to decide on better ways of handling the situation and to fill in substitute behaviors in the boxes on the right. This also may be a good time to ask participants to fill in the blank chart f with an inappropriate attack management behavior chain from their own experience and to devise a new set of steps in the companion set of boxes.

flow chart type 3: problem solving

The third type of chart is a problem solving flow chart, as illustrated in the generic example in chart 1. It has some similarities to the other two types in that it asks you to analyze behaviors, to ask how behaviors might be changed, and to view behavior as occurring in a sequence. However, the third type of flow chart is different in that it asks you to make decisions at key points along the way, forcing you to decide how best to proceed and how to apply positive reinforcement or other techniques of social learning theory in order to alter behavior.

This type of flow chart will teach you to solve problems common to childhood asthma.

In the third type of flow chart, the reader poses a problem or question in the box at the top left side of the page. If the answer is yes, then the child should be reinforced, usually through praise. If the answer is no, the next step is to conduct a behavioral analysis to determine why the problem is occurring. Once a reason is determined, then a plan of action or a plan for behavioral change should be made. At some point into the plan, the original question should be asked. If the answer is yes, the child or protagonist in the plan should be positively reinforced. If the answer is no, the same plan should be continued a bit longer or a new plan devised.

examples

Examples appear in charts ______________________.

The leader should review the situations in the problem solving charts in sessions 5 and 6 and pick one or two that are relevant to the experience of the group. The leader may use any narrative from the flow chart script in those sessions, if it is helpful.

Other issues to use in the problem solving flow charts include:

Does the child remain calm during attacks?
Does the child assume major responsibility for the asthma?
Do parents perform appropriate steps to abort an attack?
Do one or both parents panic during an attack?
Do parents share responsibility for managing a child's asthma?
Do siblings assist the child during an attack?
Do medical personnel manage a child's attacks in an appropriate manner?
Do teachers respond in an appropriate manner to a child's asthma?

optional group activity

The leader should then ask participants to come up with action plans or behavior change plans to remedy the situation. Be sure to ask if social learning techniques can be applied. Alternatively, the leader may offer a problem that derives from the experience of the group.

optional handouts

To emphasize the tracking procedure in relation to asthma, the Weekly Asthma Diary and Report of Asthma Episode/Attack may be distributed. These forms were used in the original program to help evaluate the impact of the program.

Parents may or may not find a need to use them as the children are required to complete similar report forms. Some of the items help track the cost of asthma to a family and are useful only for a long term evaluation.

Closing

We will be talking a lot about asthma next week.

We will cover all the things that cause or lead up to an attack, or the antecedent conditions.

This promises to be a lively and informative session, so I hope all of you will be here next time.

See you then.

EFFECTIVELY CHANGING CHILDREN'S BEHAVIOR

The ideas expressed below come from *Children: The Challenge,* by Rudolph Dreikurs, M.D.[1] Although published quite a while ago, the ideas remain sound and well presented. Some of the same basic ideas are also stated in *Families: Applications of Social Learning to Family Life* by Gerald R. Patterson.[2]

The Job of Child Raising

Raising children is not an inherited skill but rather a series of learned techniques. Teaching and guiding children takes conscious work and effort because acquiring positive character traits does not occur simply because children grow older. The ultimate goal of imparting courage and strength requires parents to take the time to learn the skills needed to train and educate their children. As children grow they gain courage and strength as a result of the training imparted by their parents.

Courage and strength are strong, positive words to describe qualities that enable us to live confidently in today's world and cope with the complexities of life today. Courage and strength are gained by having successful experiences. To have these successful experiences, parents and teachers need to help children have the opportunity for rich and varied experiences. They must gain in the ability to make choices about their experiences and accept the responsibility for those self-chosen choices.

Helping Children Learn

Children learn by being encouraged and by building upon the skills that they already have. Encouragement is more important than any other aspect of child raising. Correcting incorrect behavior is usually ineffective because children see corrections as criticism and easily become discouraged.

It is futile to "correct" a child's behavior verbally. If you find yourself saying, "How many times do I have to tell you?", you should begin to realize that "telling" will not work, no matter how many times you try.

Children easily become "mother-deaf" when there are too many demands and requests. Try to establish a routine where you do not have to make many requests or demands. For example, if chores are established early as part of the family experience, they become a habit that will be maintained with periodic reinforcement.

Children learn by making choices. The decision is *theirs.* For example, you can tell children, "You may join us at the table when you have washed up." They may choose not to join you but that is their choice. Give them a choice that you as a parent can tolerate, as you must be able to live with whichever choice they choose. Children are very perceptive in knowing when you give them false choices.

Children need the opportunity to make their own decisions and to take the consequences for those decisions. This gives them practice making choices.

Children learn most effectively through their own experiences, not by being cautioned or told how to do something. Let them experience.

As adults we have physical power over our children because of our larger size, but the use of this power is dangerous. Using physical power can lead to physical abuse and is rarely effective in achieving true behavior change in the long run. Likewise, telling children to do something "because I said so," leads to rebellion, not true behavior change. In today's world we must learn to lead and stimulate our children toward growth. We must act as knowledgeable leaders and influence them toward using their own decisionmaking skills.

---

[1] Dreikurs, R. with Soltz, V. *Children: The Challenge,* Hawthorn Books, Inc., 1964.

[2] Patterson, G.R. *Families: Applications of Social Learning to Family Life,* Research Press, 1975.

At the same time we are careful not to use power based on physical strength, we do want to be clear about what is acceptable behavior and what is unacceptable behavior. Dreikurs suggests that parents do not have the right to impose their will but do have an obligation not to give in to undue demands.

Conflict

In times of conflict, the best course of action is to *act*. Words will not do much to change anything during a conflict situation. Talk at some other time, when things are calm. Remain calm and assertively state what your action will be. Hold firm to that stated action. *Do not argue.* Proceed with the action. In this way your child will come to expect that you do what you say and are a reliable person.

During a conflict, remove either the child or yourself from the action. You may retreat from the action if the battle is for your attention or time. You may send your child to "time out," as explained in the "Time Out" section. Removing attention will help the child learn to work toward cooperation rather than to engage in power struggles.

Illness

Children are resilient and they usually cope with illness better than their parents. Parents frequently unconsciously teach their children that they are not able to meet life's demands because they are ill. As a parent of a child who has a chronic illness, you need to consider how much of your life hinges upon your child's illness. Be careful that you do not make your child's illness your "cause" or "duty" in life.

Do not pity the child. If you do, he/she will think that pity is his/her right. Dreikurs cautions, "When we label a child, we see him as we have labeled him. So does he. He identifies himself with his label. This reinforces his faulty self-concept and prevents his moving in a constructive direction."[3] For this reason, try not to use the term "asthmatic," even though it is convenient and widely used. It is this conciousness and extra effort that will enable the child to gain courage and strength.

---

[3] Dreikurs, R. *Op. cit.*

Tracking

Tracking means keeping track of behavior, usually by keeping written records of the number of times or the length of time that a behavior is observed. One belief of social learning theory is that our memory and impression of how many times something occurs may not be reliable. We become familiar with frequent behavior and do not pay attention to the number of times that it occurs. Then when the behavior change occurs, we don't recognize it.

If you are concerned about changing an undesirable behavior, the first step is to keep track of how often the behavior is occurring. Keep track for enough time to get a realistic picture of what usually occurs. It is not uncommon for a behavior to change simply because you are observing it. Occasionally this behavior change is permanent but usually the change is temporary and resumes at a regular frequency. For this reason, keep track until the behavior occurs at what you suspect is a normal frequency.

The tracking method should foster accurate recordkeeping: a chart hung in a prominent place, an index card that fits in a pocket, a wrist golf-score marker, etc. A commitment to consistency must be made. If a behavior occurs throughout the day, it may be easier to track for only one period of time, for example, from 7 to 8:30 a.m., or from 4:30 to 6:30 p.m. Choose a time period during which you feel that you can accurately track. Well-prepared behavior change programs need accurate, written recordkeeping to succeed.

Tracking must be continued throughout the behavior change period to judge accurately whether or not the behavior is changing. Remember that written records are more accurate than memory.

Pinpointing

Pinpointing means defining a behavior exactly. When seeking to change behavior, you must first pinpoint what parts of the behavior you want to change. The more clearly the behavior is defined, the better will be the understanding of the change desired.

Natural Consequences

Natural consequences is a child-raising principle advised by Rudolph Dreikurs, M.D., in *Children: The Challenge.* It means allowing the natural sequence of events to occur as the result of the judicial withdrawal of the parents. Natural consequences describes the logical connection between a behavior and the consequences that result from the behavior; for example, the mother forgets to set the timer for the cake, the cake burns; the child forgets to take his lunch to school, the child is hungry at lunchtime. When adults do not interfere, the reality of the natural flow of events teaches the child the results of his behavior.

Using the principle of natural consequences to alter behavior means allowing the child to experience the direct consequences for his/her behavior. All too often parents feel they must modify or mediate those consequences. The child frequently is capable of dealing with consequences but is not allowed the opportunity to do so by the parents.

In deciding whether to use natural consequences ask yourself the question, "What would happen if I didn't interfere?" While effective, natural consequences cannot be used in situations where the safety of the child is concerned. The natural consequences of a child playing in the street could be the child getting hit by a car. Obviously, this would not be a suitable time to use natural consequences.

Time Out

Time out (TO) is removing a child from the mainstream, taking him/her away from the opportunity to get reinforcement. It is a technique closely related to "Go stand in the corner!" Time out can produce rapid behavior change and is best used when it is not desirable to use the slower method of positive reinforcement. Time out can be used with children from age 3 to age 11 to 12. Do not use it with older children. As with most child-raising principles, you must be consistent. There are specific procedures that have proven effective when using time out:

- *Explain to the child the procedures for time out before it is used.* Calmly explain that from now on, to help him/her practice not doing the unwanted behavior, he/she will be required to go to TO whenever the behavior occurs. Tell how long she/he will be required to stay in TO, and that you will set a timer to let him/her know when the time is up. Explain that more time will be added if there is whining or complaining.
- *Use a short amount of time for TO periods.* It has been shown that having a child stay in TO for 2–5 minutes is as effective as 30 minutes. This is not punishment. It is helping them learn new habits of behavior.
- *The place selected for time out must be a dull, nonreinforcing place.* A bathroom is strongly suggested. For young children, remove all towels, toilet articles, and other items. Any mess that is made when a child is in TO must be cleaned up by the child before leaving time out.
- *No matter how difficult it is, you must remain calm when using TO.* The first time the undesired behavior occurs, calmly tell the child to go to TO and set the time. Do not argue or yell. If there is protest, repeat the request and add one more minute for the TO period. If you plan to use TO, be prepared for the first time that you use it. If you follow the guidelines carefully at first, you have a greater chance of success the first time; the next times will be easier.

STEPS IN INSTITUTING BEHAVIORAL CHANGES

1. Specify the end goal or the problem behaviors.

PINPOINT behaviors you want to change. The behaviors to be changed must be observable and countable. For example:

- "Being messy" needs to be defined by observable behaviors, such as:
  —Having toys left on the floor.
  —Not having hair combed by dinner time.
- "Being neat" means:
  —Having all the toys put away by 7 p.m.
  —Having hair combed by dinner time.

2. Track the behavior; observe and count each time the behavior occurs.

During the BASELINE period, you will just be counting, not yet trying to change anything.

3. Plan a PROGRAM to reward desired behavior and to discourage undesired behavior.

A PROGRAM is a plan of action for specific behavior change that usually involves some kind of CONTRACTING, or agreement, about what is to be changed and what the reward will be for changing. When planning your program, make all steps small and attainable. Especially in the beginning, it is important for the person who is changing to achieve success with the program. Later the program can be revised and increased performance of the desired behaviors will be necessary to achieve the reinforcer. Include REINFORCERS in your program. Both social and nonsocial reinforcers must be used. Social reinforcers include praise, a smile, a hug, etc.; nonsocial reinforcers include a food treat, a point system, a star chart, money, etc. When reinforcing:

- Make sure your reinforcers are things that the person changing really wants; do not hesitate to change the reinforcers when they are no longer effective.
- Make sure that you reinforce as *quickly* as possible after the desired behavior is achieved.
- Make sure that you reinforce *every time* the desired behavior is achieved.

4. Institute the program, making sure that each person involved understands and agrees to all elements of the program.

Track the behaviors and reinforce as previously agreed.

5. Continue to SHAPE toward desired goal.

Shaping means getting closer to the goal by rewarding the person for achieving small steps that will lead toward the final goal. If the program is not working, that is, if there is no change in the behavior after a reasonable amount of time, analyze the program. The steps may be too large; if so, go back and make each step easier to reach. The reinforcers may not be potent enough or they may not be given promptly or consistently. Make sure you are reinforcing with social reinforcers too. Also, analyze your role as administrator; are you holding up your end of the agreement?

SITUATION CARDS: PROBLEMS TO USE IN PLANNING BEHAVIORAL PROGRAMS

1. Your child usually forgets his after-school dose of medicine. You are usually at work when he gets home. You try to call and remind him, but that doesn't seem to be a good solution. Plan a program to help remedy the situation.
2. Your child sits around all the time and doesn't get involved in physical activities. Plan a program or strategy to help.
3. Your child waits until Sunday evening to begin homework. She then stays up late and is grouchy and is more susceptible to colds for a few days. Plan a program or strategy to help.
4. Your child's room is always a mess. Plan a program to help.
5. Your teenager has always handled his own asthma management well. Now that he is 14, he neglects his regular medicine and overuses his neb. Plan a program or strategy to help.
6. Your child always waits until the last minute to take preventive measures to avert an attack. Plan a strategy or plan to help.

LEARNING BEHAVIOR

Be sure to be familiar with this background material. It contains important concepts for parents to know.

See the text of the Learning Behavior piece in the Leader Background Material for session 3.

A DO-IT-YOURSELF AUDIOTAPE: BEHAVIOR MANAGEMENT AND ASTHMA

This script was written by Dr. Thomas Creer with input from Anita Baker, Jeff Holm and Ron Westlund. It covers common behavior management techniques and their application to asthma management.

It is designed to be converted into an audiotape recording that can be used to stimulate discussion during session 3 or session 4.

Before the session, enlist volunteers or coworkers to play the parts of the moderator, Mrs. Jones, Mr. Jones, Mrs. Smith, and Mr. Smith. Have them rehearse reading their parts in a clear, expressive fashion, and record the content of the script on a cassette audiotape. Early in the recording process, play back the parts that have just been read to check for the quality and clarity of the sound.

Before conducting the session, review the script and make notes in the left margin to identify points you wish to stress. Use these notes later to locate cues in the storyline for stopping the tape and making comments of your own.

Script on Behavior Management and Asthma

MODERATOR: Today, we are going to discuss ways to change behavior. Most of the techniques we will describe are familiar to all of you. I am certain that, even today, you may have used such methods. In fact, there is really nothing new about anything we are going to discuss; the techniques are those used by your parents with you and by your grandparents with your parents. The only difference is that we are going to describe how you might be more effective in using these techniques. In doing so, we hope both you and your child will find your lives more pleasant and happy.

As you know, we can change behaviors in many ways. There are cases where you may wish to see your child perform certain behaviors or to perform the behaviors more frequently or, you wish to increase or strengthen a particular behavior. Does anyone have an example of this?

MRS. SMITH: The behavior I would like to see my child perform is taking his medicine on time. There isn't a single day when I don't have to remind him to take his medicine. I hate to nag him, but I don't know any way else to make certain he takes his medicine when he should.

MRS. JONES: Boy, do I know what you mean. Mary is not only bad at remembering to take her medicine, but she always pulls a face and says something smart when I tell her it is time for her tablets.

MODERATOR: You both have cited a common behavior that many parents of asthmatic children would like to see changed. How might we begin?

MRS. SMITH: I think it would be good if my boy knew how to take his medicine properly. Although his physician's assistant showed him how to use a nebulizer, she did it so fast that I don't think he really learned what to do.

MODERATOR: That's a good beginning point—making certain that your child knows how to dispense medicine to himself. This will involve what we call conducting a BEHAVIOR ANALYSIS. This means you should closely observe Mary to see exactly what she does. On the basis of your observation, you may target certain behaviors to be changed. Mrs. Smith said she would like to see her son take his medicine correctly. This is our TARGET behavior. What would be a logical second step?

MRS. JONES: I think that it would be good to keep the medicine in the same place both at home and at school. Since Mary is pretty active, she carries the nebulizer around with her. We sometimes lose it.

MODERATOR: That's a good point—keeping the nebulizer in the same place all of the time. This serves as a PROMPT for your daughter in that she knows where to receive help when she needs it. Does anyone have a suggestion for a third step?

MR. SMITH: While George says he always takes his medicine, I'm not so certain that he always does as he says. Whenever my wife and I are home, we ask that he take his medicine around us. That way, we are satisfied he has done what his doctor told him.

MODERATOR: That's another excellent point—making certain that your son takes his medicine as directed. Let us stop here and review steps to improve taking medicine. First, you conducted a behavioral analysis to make certain your youngster knows how to take his/her medicine. Teaching your child these skills may have occurred either in the physician's office or at home. Next, you placed the nebulizer in a central location where it could always be quickly located by either you or your child. By doing so, your youngster had a prompt or cue to obtain the necessary help when he or she needed to do so. Finally, Mr. Smith suggested that you observe to make certain your child takes his/her medicine correctly. This not only verifies that the medicine was taken, but permits you to correct any problems your child may have in properly dispensing the medication to himself or herself.

What you have described is a perfect example of what we refer to as SHAPING. This means that, by starting with a simple response, you have moved step by step until your youngsters take their medicine as instructed. Was there anything we missed in discussing this sequence of events?

MRS. SMITH: I have always found that I could get George to do what I ask of him if I give him a hug or some praise immediately after he has performed a certain behavior.

MODERATOR: Excellent point, Mrs. Smith! That's exactly what I was looking for as an answer. What Mrs. Smith described is rewarding or reinforcing a child for performing a certain behavior. REINFORCEMENT can be defined in many ways, but we will define it here as offering some sort of positive event immediately after your child has performed a correct response. In this case, it was an arrangement that held between Mrs. Smith and George. While a reinforcer can be many things, here it means the hug or praise Mrs. Smith gave George when he performed the correct behavior. I'm certain that all of you can provide examples of reinforcers or rewards you use with your children.

MRS. JONES: I use all kinds of rewards. Mary knows what she has to do each week for her allowance. She does work for that allowance. The rest of the week, I try and tell her how much I appreciate the things she does, like dusting her room or taking her medicine on time. There are times when I think she likes my reaction better than her allowance.

MODERATOR: That is a very good point—many of us would rather have what we refer to as SOCIAL REINFORCEMENT than any other type of reinforcement. I'm sure all of you can think of an instance where someone said something that meant a lot to you.

MR. JONES: While I was listening to my wife, I thought of something similar to what she described. For years, I have made every effort to get a weekly report done each Friday. I never knew if anyone actually read the report, but when my boss's boss recently came down from the home office, he was introduced to me. He told me how much he appreciated the work I put into these weekly reports. It was really nice to hear him say that. For years, I didn't think anyone paid any attention to my work.

MODERATOR: That's a perfect example, Mr. Smith. All of us like to receive some recognition for what we think others take for granted. Before we leave the topic of reinforcement, let us review some characteristics of reinforcement. First, it is an arrangement between two people. This may be based upon some sort of agreement a parent has worked out beforehand with a child. For example, many parents have worked out arrangements with their children as to what the youngsters should do before they receive their allowance. In other words, you provide something reinforcing when specific responses are made by your child. This is sometimes called a CONTINGENCY in that reinforcement is contingent upon the occurrence of a particular behavior. Second, reinforcers should be presented immediately after the behavior occurs. This will increase the likelihood that your child will perform the behavior in the future. Third, the behavior should be labeled by telling the child why he or she is being reinforced. This provides a child with information about your expectations and makes the world more predictable for both of you. Fourth, as Mrs. Jones noted all kinds of rewards are used. It is good to use a variety of reinforcers, including social reinforcement. Fifth, when we use shaping, we need to use reinforcers after each step in the behavior we are teaching our children. This way, we can gradually shape the child's behavior to approximate whatever behavior we have set as a final goal. As you recall, we described shaping in teaching your children to take their asthma medications correctly.

We described two types of reinforcers—something tangible like an allowance and some type of social interaction such as a hug or praise. The first type of reinforcer is important in increasing or shaping a behavior. Thus, you may wish to think of some sort of reward system—such as a point system—to increase or strengthen your child's behavior. After the behavior is occurring at the level you like, you may then use only social reinforcement. It is an excellent way to maintain a person's behavior

MR. SMITH: Let me ask if I have social reinforcement right—it is something like a friendship you have with another person?

MODERATOR: You're correct, Mr. Smith.

MR. SMITH: If that's the case, I know of a good example of social reinforcement. Our neighbor, Mr. Brown, could have retired from his job several years ago. Lord knows, he has enough money to do so. However, he likes his job so much, particularly the buddies he has worked with for years, that he doesn't want to retire. He hates vacations and looks forward to going to work each day.

MODERATOR: That may represent an extreme—I'm certain many of us would like to retire when the time comes—but it is a perfect illustration of how we will continue to perform certain behaviors because of social reinforcement we receive from others for doing so.

For those of you with older children, you will want to negotiate with them about a type of reinforcement or behavioral contingency before it is introduced. For example, an excellent reinforcer to use with older teenagers is access to your family automobile. Most teenagers will perform the specific behaviors you have negotiated in order to use the family car.

MR. JONES: Boy, I'll buy that! My neighbor bought his son a car and now the kid's never around. Our older boy will do all of his chores if he can use the car Saturday night. And, he brings it back with gas in the tank!

MODERATOR: You've hit upon something that many parents wish they had to use in negotiating with their teenager. Unfortunately, when teenagers own their own car, the use of the family car can no longer be used as a reinforcer.

Before we move on to another technique of changing behavior, let us take the example we provided about children taking their medicine a bit further. After awhile, you may decide that you want your youngsters to be more responsible for taking their own medicine. How might we accomplish this goal?

MRS. JONES: Well, I guess that we could shape them to do so.

MODERATOR: That's an excellent suggestion, but we do the shaping a little differently here. We begin to remove the prompts we formerly used to cue the child to respond in the correct way. For example, we might try the following procedure: After having the child take the medicine in your presence, as suggested by Mr. Smith, you might begin entrusting your child to take the medicine on his or her own. But, do this gradually. You might ask that he or she take medicine in your presence only part of the time; this will permit you to check that he or she is indeed taking the medicine correctly and on schedule. Gradually, according to the progress exhibited by your child, you may reduce the number of times you request your youngster take his or her medicine in your presence. Eventually, your child should take the asthma medicine prescribed by your physician with no prompting from you. You will still want to periodically check the number of pills the youngster has to make certain that they are being taken. If they are, you have successfully transferred the responsibility for taking medicine correctly on to your child. If you count too many or too few pills in comparison with the number that should be present, you may wish to discuss the matter with your child. Such discussions are sometimes very useful. It is not unusual that you may learn of any possible side-effects caused by the medication. This may mean you will wish to discuss the matter with your physician. If it is just a matter of your youngster forgetting his or her medicine, you may wish to reintroduce the method you had of monitoring medication taking in your youngster.

We have described the use of reinforcement to strengthen behavior. Think of the statement, "Too much of a good thing can be bad." What does this mean to you?

MRS. SMITH: It means a lot to me. I love almost any kind of sweets. Yet, I know what they do to my weight. I watch how much dessert I have even when I don't want to.

MR. SMITH: I know of another example. When I was younger, I remember that I thought it was neat to smoke. Well, it was until my father caught me. He did what his father had done to him when my dad was caught smoking: he made me smoke a whole cigar. I cannot stand the smell of any kind of tobacco smoke, particularly cigars.

MODERATOR: Both of the examples given by the Smiths are excellent. They illustrate what we refer to as SATIATION, namely providing too much positive reinforcement in order to weaken a particular behavior. Is there any particular example of the use of satiation with an asthmatic child that any of you may like to share with the group?

MRS. JONES: I'm not certain what I did was satiation, but I remember what I did when I thought Mary was trying to use her asthma to avoid going to school. Since I was uncertain she really was having asthma to the extent she claimed, I told her she could stay home all day, but that she had to remain in bed. At first, she thought this was fine. Later, I thought she would drive me crazy. She hated spending the day in bed and, early the next morning, she was more than ready to return to school.

MODERATOR: Mrs. Jones has described an excellent way to manage a problem common to asthmatic children: how to handle them when you have doubt whether or not they should remain home or go to school. Her solution was perfect because, if Mary was as ill as she claimed, the bed rest would have been beneficial to her. However, if the youngster was attempting to test you and avoid going to school, remaining in bed was not the pleasant outcome she anticipated. It gets boring looking at the same ceiling all day. Under these conditions, most children become sated rather rapidly and begin anticipating their return to the classroom.

As long as we are talking about ways to weaken or reduce the occurrence of behaviors, what are other ways that might be used?

MR. SMITH: I used to think that spankings were good because that's how my parents disciplined me. However, I don't think they are as good as I used to.

MODERATOR: Why?

MR. SMITH: Well, I remember once when I hit George on the bottom for running into the street. It was a good way to keep him from doing that anymore. However, when he later was diagnosed as having asthma, I found that if he were ever spanked for anything, he would begin to cry. I guess he is no different than any other kid. What happened to George when he cried, however, was that he frequently began to wheeze and have an attack. His mother and I soon decided that we no longer wished to bring on any asthma by spanking him.

MODERATOR: You have described pros and cons of punishment very well, Mr. Smith. For a younger child, a spank, paired with a loud "No!", is a good way to keep them from engaging in behaviors that may present a danger to themselves. Examples here would be, as described by Mr. Smith, running into the street or attempting to touch the hot plate of a stove. Beyond these very few examples, however, physical punishment is not an effective way to reduce the frequency of behavior. As Mr. Smith pointed out, it may provoke crying which in turn, can induce an asthma attack. It may also serve more as an expression of your own anger than as a desire to change your child's behavior. Are there any other reasons you can think of to avoid using physical punishment?

MRS. JONES: Besides crying, we have found that spanking Mary used to cause her to become quite aggressive towards us. She would scream and shout back at us when she was spanked. We found that this also brought about asthma.

MODERATOR: Good point, Mrs. Jones. Shouting and screaming can trigger the attacks of some children. Any other reasons you may care to share with the group?

MRS. SMITH: Besides getting upset, we have noticed that George will make an effort to get back at us if we spank him. This usually takes the form of his not taking his medications as he is supposed to. Since this can also precipitate attacks, there really is no benefit to spank the boy.

MODERATOR: I think that we all agree that, except in rare cases where a young child is doing something that may result in injury to himself or herself, we should avoid the use of punishment. Is there any procedure that you think you might use to reduce or weaken behavior?

MR. SMITH: There is a good way to discipline our children: if we send them to their rooms. They hate doing that, especially when they are watching something they like on TV.

MODERATOR: What you have described Mr. Smith is what we call TIME-OUT. This means, quite simply, that you make the child's environment a bit dull by removing him from activities he enjoys. There are a number of ways to achieve this, but not letting the child watch TV or sending them to a boring room, such as a bathroom, are examples of the use of time-out.

Time-out has been especially effective in reducing asthmatic children's use of hospitals when they really don't require such treatment. By removing TV, comic books, and the opportunity to interact with other children, the youngster may soon discover he prefers being at home to being in the hospital.

Another procedure that can be used to weaken behavior is referred to as RESPONSE COST. This means that, like your paying a fine for speeding, a child loses part of his or her allowance for misbehaving.

MR. JONES: We used something like this to increase Mary's completion of homework. I told her she would receive a $5.00 allowance at the beginning of the week. But, when I gave it to her, I said that each time I caught her not working at her homework when she had assignments or if I heard from her teacher that she had not completed her work, I would take away part of that allowance. She lost some money the first week, but not much since then. There are weeks when she will complete all of her homework and hang on to every penny of her allowance for the week.

MODERATOR: It sounds like you have an excellent knowledge of both what is meant by response cost and how it should be used. Is there any other way that you can think of to weaken or reduce the occurrence of a behavior?

MR. SMITH: Maybe I'm lazy, but I sometimes find that ignoring a problem will cause it to go away. It doesn't happen all the time, but it happens enough to make me think there is something to it.

MODERATOR: We can describe your action in more technical terms as EXTINCTION. Basically, this means that you fail to provide any reinforcement after the occurrence of a behavior. After awhile, there should be a reduction or weakening of the behavior. Extinction is easily the most common procedure we use to change behaviors we wish to seek reduced or weakened. It is part of the process that changes many of the behaviors all of us perform during our lifetime. Thus, while we initially received social reinforcement from our parents when we talked babytalk, they soon soured on this idea and ignored such speech. At the same time, they began to provide social reinforcement for our talking in a manner more appropriate for children our age. In this way of extinguishing old behaviors and reinforcing new behaviors, we acquired many of the behaviors we exhibit today. The relation between extinction of behaviors that are no longer useful to us and acquiring new behaviors we need continues throughout our lives. It is the major way we have of surviving in this world. I'm certain all of you can see the relevance of this technique with asthmatic children.

MRS. JONES: When Mary first started having attacks, she would become panicky; in fact, we all did. Maybe we provided her some reinforcement for this; I can't remember. However, we did try and extinguish the behavior by acting as matter-of-fact about treating attacks as we could. In this way, we have reduced her panic, a result that has made the entire family happier.

MODERATOR: That's a good example, Mrs. Jones.

MRS. SMITH: I think we do something similar. Before we started this program, we used to have George tell us whenever he thought he was about to have an attack. We actively reinforced him to do so. As he has been involved with this program, however, we have encouraged him to take more responsibility for his attacks. To do so, we have sometimes ignored some of his statements about his condition. George has responded by practicing self-management skills and asking for assistance only when he really does require our help.

MODERATOR: This example not only shows extinction, but it shows that you have actively encouraged your boy to practice the self-management skills he is learning through the program.

We are now going to turn to a final subject that is of importance to all of us—NEGATIVE REINFORCEMENT. Despite what we might think, negative reinforcement is not the application of some aversive stimulus such as spanking. It also has nothing to do with the weakening or reduction behavior. What negative reinforcement means is that we attempt to avoid or escape from something we find aversive to us. As a result, there is a strengthening of the avoidance or escape behaviors we perform. There are probably a number of illustrations all of you can provide for this.

MR. JONES: I think I know what you mean. When we were driving down for the meeting, we ran into a radar trap. Fortunately, I was going below the speed limit. Still, I noticed I slowed down even further when we passed the highway patrol. Even though I didn't think I was near the limit, I did not want a mistake to occur and to have them believe I was speeding.

MODERATOR: A perfect example, Mr. Jones. Most of the day-to-day behaviors we perform occur because of negative reinforcement. We try to be at work on time so we are not docked in our salary and who knows the number of deadlines, including April 15, when we try to perform some action in order to avoid some sort of aversive consequence from occurring. Can any of you think of how negative reinforcement is related to childhood asthma?

MRS. SMITH: An asthma attack is an aversive event for everyone in the family, especially George. In order to avoid attacks, George takes medicine. He knows that if he takes his medicine as prescribed, he will avoid many attacks from occurring.

MODERATOR: Another perfect example. One of the goals of this program is to teach children how to avoid unnecessary attacks from occurring. In order to do so, children first have to learn what stimuli precipitate their attacks. By having this knowledge, they know what will trigger future attacks. When they have learned this, they can then avoid many of precipitants of attacks and, thereby, reduce the likelihood of future aversive events—asthma attacks.

MRS. JONES: This is easier said than done for us. Mary is allergic to animals, yet we do not want to get rid of our family dog, Tressie. We keep the dog outside and tell Mary to keep away from the dog. But, as you might expect, it seems impossible for her to do so. She still pets the dog even when there is the chance she may end up with an asthma attack.

MODERATOR: What you described is a complicated problem for many families. The best solution would be to rid your family of the pet, but I recognize this is not always easy to achieve. What you should do is carefully weigh the health consequences of the pet on your child and act accordingly. If the consequences are slight, then there is probably no reason to get rid of your dog. If, on the other hand, there are serious health consequences to your child, you must remove the animal. The deciding factor here is always the health of your youngster.

There are other types of stimuli that must be avoided by children if they are to keep from having attacks. Avoiding grass and tree pollen is required to avoid attacks with some youngsters. Can any of you think of other stimuli or activities that might be avoided in order to prevent attacks from occurring?

MRS. SMITH: Like many asthmatic children, George has been diagnosed as having exercise-induced asthma. We want him to exercise as much as he can not only for his health, but because he enjoys it. He especially likes to play baseball. What we hope he can do is to determine better what his limits are with regard to exercise. If he can learn this as a result of participating in this program, he can still exercise but suffer as few exercise-induced attacks as possible.

MODERATOR: At the beginning of this discussion, I noted that all of the behavior change techniques we were going to discuss were familiar to all of you. You certainly proved this to be correct. The best advice now is to be as systematic and consistent as you can in applying these methods. If you do, I think that you will find that you and your child will have made a major contribution to controlling the asthma experienced by the youngster. Over and above this, I know that systematic and consistent application of these behavioral techniques will create a happier home and life for both you and your child.

SAMPLE WEEKLY ASTHMA DIARY

Name of Child ______________________ Dates ________ to ________

Name of Informant ______________________________________

Part I: GENERAL PHYSICAL CONDITION OF CHILD

Check your impressions of the patient's daily condition

Date:	Mon *23*	Tues *24*	Wed *25*	Thur *26*	Fri *27*	Sat *28*	Sun *29*
No asthma	✓	✓	✓		✓	✓	✓
Mild asthma				✓			
Moderate asthma							
Severe asthma							

If any of these
boxes are checked,
use a report form.

Part II: PEAK FLOW AND MEDICATIONS DATA

Write in the best of three blows obtained with the peak flow meter:

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Morning	*260*	*250*	*260*	*240*	*250*	*250*	*260*
Evening	*260*	*260*	*230*	*250*	*260*	*260*	*270*

List medications and write amounts taken daily: ______________________

Aminophylline 100mg 3× a day

If the child takes as needed medications only, note here whenever these medications are used:

Isuprel (as needed)

When the child takes daily medications, fill out the MEDICATIONS SCHEDULE below according to the following code:

1 – Child took medications on schedule (includes plus or minus ½ hour)
2 – Child was over half an hour to 2 hours late in taking medications
3 – Child was 2 to 4 hours late in taking medications
5 – Child missed medications entirely

MEDICATIONS SCHEDULE

List each scheduled medications time in a separate box below:

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
8 a.m.	1	1	1	1	1	1	1
12 noon	3	2	1	5	1	1	1
8 p.m.	1	1	1	5	1	1	1

Part III: ASTHMA MANAGEMENT

Check all the activities that occurred this week:		Amount for each checked activity* I paid	Insurance paid
Prescription filled	✓	$5.98	
Had allergy shot	✓	6.00	
Visited doctor:			
Regular appointment	✓		$15.00
Emergency visit			
Lab work			
Went to hospital:			
Admitted			
Emergency room treatment			
Transportation used for asthma management	Gas	.50	
Loss of parent(s) work time			
Other (describe)			

*If cost is estimated, please write the letter "E" after your figure.

EXPLANATION OF **BEHAVIORAL TERMS**

Tracking

Tracking means keeping track of behavior, usually by keeping written records of the number of times or the length of time that a behavior is observed. One belief of social learning theory is that our memory and impression of how many times something occurs may not be reliable. We become familiar with frequent behavior and do not pay attention to the number of times that it occurs. Then when the behavior change occurs, we don't recognize it.

If you are concerned about changing an undesirable behavior, the first step is to keep track of how often the behavior is occurring. Keep track for enough time to get a realistic picture of what usually occurs. It is not uncommon for a behavior to change simply because you are observing it. Occasionally this behavior change is permanent but usually the change is temporary and resumes at a regular frequency. For this reason, keep track until the behavior occurs at what you suspect is a normal frequency.

The tracking method should foster accurate recordkeeping: a chart hung in a prominent place, an index card that fits in a pocket, a wrist golf-score marker, etc. A commitment to consistency must be made. If a behavior occurs throughout the day, it may be easier to track for only one period of time, for example, from 7 to 8:30 a.m., or from 4:30 to 6:30 p.m. Choose a time period during which you feel that you can accurately track. Well-prepared behavior change programs need accurate, written recordkeeping to succeed.

Tracking must be continued throughout the behavior change period to judge accurately whether or not the behavior is changing. Remember that written records are more accurate than memory.

Pinpointing

Pinpointing means defining a behavior exactly. When seeking to change behavior, you must first pinpoint what parts of the behavior you want to change. The more clearly the behavior is defined, the better will be the understanding of the change desired.

Natural Consequences

Natural consequences is a child-raising principle advised by Rudolph Dreikurs, M.D., in *Children: The Challenge.* It means allowing the natural sequence of events to occur as the result of the judicial withdrawal of the parents. Natural consequences describe the logical connection between a behavior and the consequences that result from the behavior; for example, the mother forgets to set the timer for the cake, the cake burns; the child forgets to take his lunch to school, the child is hungry at lunchtime. When adults do not interfere, the reality of the natural flow of events teaches the child the results of his behavior.

Using the principle of natural consequences to alter behavior means allowing the child to experience the direct consequences for his/her behavior. All too often parents feel they must modify or mediate those consequences. The child frequently is capable of dealing with consequences but is not allowed the opportunity to do so by the parents.

In deciding whether to use natural consequences ask yourself the question, "What would happen if I didn't interfere?" While effective, natural consequences cannot be used in situations where the safety of the child is concerned. The natural consequences of a child playing in the street could be the child getting hit by a car. Obviously, this would not be a suitable time to use natural consequences.

Time Out

Time out (TO) is removing a child from the mainstream, taking him/her away from the opportunity to get reinforcement. It is a technique closely related to "Go stand in the corner!" Time out can produce rapid behavior change and is best used when it is not desirable to use the slower method of positive reinforcement. Time out can be used with children from age 3 to age 11 to 12. Do not use it with older children. As with most child-raising principles, you must be consistent. There are specific procedures that have proven effective when using time out:

- *Explain to the child the procedures for time out before it is used.* Calmly explain that from now on, to help him/her practice not doing the unwanted behavior, he/she will be required to go to TO whenever the behavior occurs. Tell how long she/he will be required to stay in TO, and that you will set a timer to let him/her know when the time is up. Explain that more time will be added if there is whinning or complaining.
- *Use a short amount of time for TO periods.* It has been shown that having a child stay in TO for 2–5 minutes is as effective as 30 minutes. This is not punishment. It is helping them learn new habits of behavior.
- *The place selected for time out must be a dull, nonreinforcing place.* A bathroom is strongly suggested. For young children, remove all towels, toilet articles, and other items. Any mess that is made when a child is in TO must be cleaned up by the child before leaving time out.
- *No matter how difficult it is, you must remain calm when using TO.* The first time the undesired behavior occurs, calmly tell the child to go to TO and set the time. Do not argue or yell. If there is protest, repeat the request and add one more minute for the TO period. If you plan to use TO, be prepared for the first time that you use it. If you follow the guidelines carefully at first, you have a greater chance of success the first time; the next times will be easier.

STEPS IN INSTITUTING **BEHAVIORAL CHANGE**

1. Specify the end goal or the problem behaviors.

PINPOINT behaviors you want to change. The behaviors to be changed must be observable and countable. For example:

- "Being messy" needs to be defined by observable behaviors, such as:
  —Having toys left on the floor.
  —Not having hair combed by dinner time.
- "Being neat" means:
  —Having all the toys put away by 7 p.m.
  —Having hair combed by dinner time.

2. Track the behavior; observe and count each time the behavior occurs.

During the BASELINE period, you will just be counting, not yet trying to change anything.

3. Plan a PROGRAM to reward desired behavior and to discourage undesired behavior.

A PROGRAM is a plan of action for specific behavior change that usually involves some kind of CONTRACTING, or agreement, about what is to be changed and what the reward will be for changing. When planning your program, make all steps small and attainable. Especially in the beginning, it is important for the person who is changing to achieve success with the program. Later the program can be revised and increased performance of the desired behaviors will be necessary to achieve the reinforcer. Include REINFORCERS in your program. Both social and nonsocial reinforcers must be used. Social reinforcers include praise, a smile, a hug, etc.; nonsocial reinforcers include a food treat, a point system, a star chart, money, etc. When reinforcing:

- Make sure your reinforcers are things that the person changing really wants; do not hesitate to change the reinforcers when they are no longer effective.
- Make sure that you reinforce as *quickly* as possible after the desired behavior is achieved.
- Make sure that you reinforce *every time* the desired behavior is achieved.

4. Institute the program, making sure that each person involved understands and agrees to all elements of the program.

Track the behaviors and reinforce as previously agreed.

5. Continue to SHAPE toward desired goal.

Shaping means getting closer to the goal by rewarding the person for achieving small steps that will lead toward the final goal. If the program is not working, that is, if there is no change in the behavior after a reasonable amount of time, analyze the program. The steps may be too large; if so, go back and make each step easier to reach. The reinforcers may not be potent enough or they may not be given promptly or consistently. Make sure you are reinforcing with social reinforcers too. Also, analyze your role as administrator, are you holding up your end of the agreement?

PROBLEMS TO USE IN **PLANNING BEHAVIORAL PROGRAMS**

1. Your child usually forgets his after-school dose of medicine. You are usually at work when he gets home. You try to call and remind him, but that doesn't seem to be a good solution. Plan a program to help remedy the situation.

2. Your child sits around all the time and doesn't get involved in physical activities. Plan a program or strategy to help.

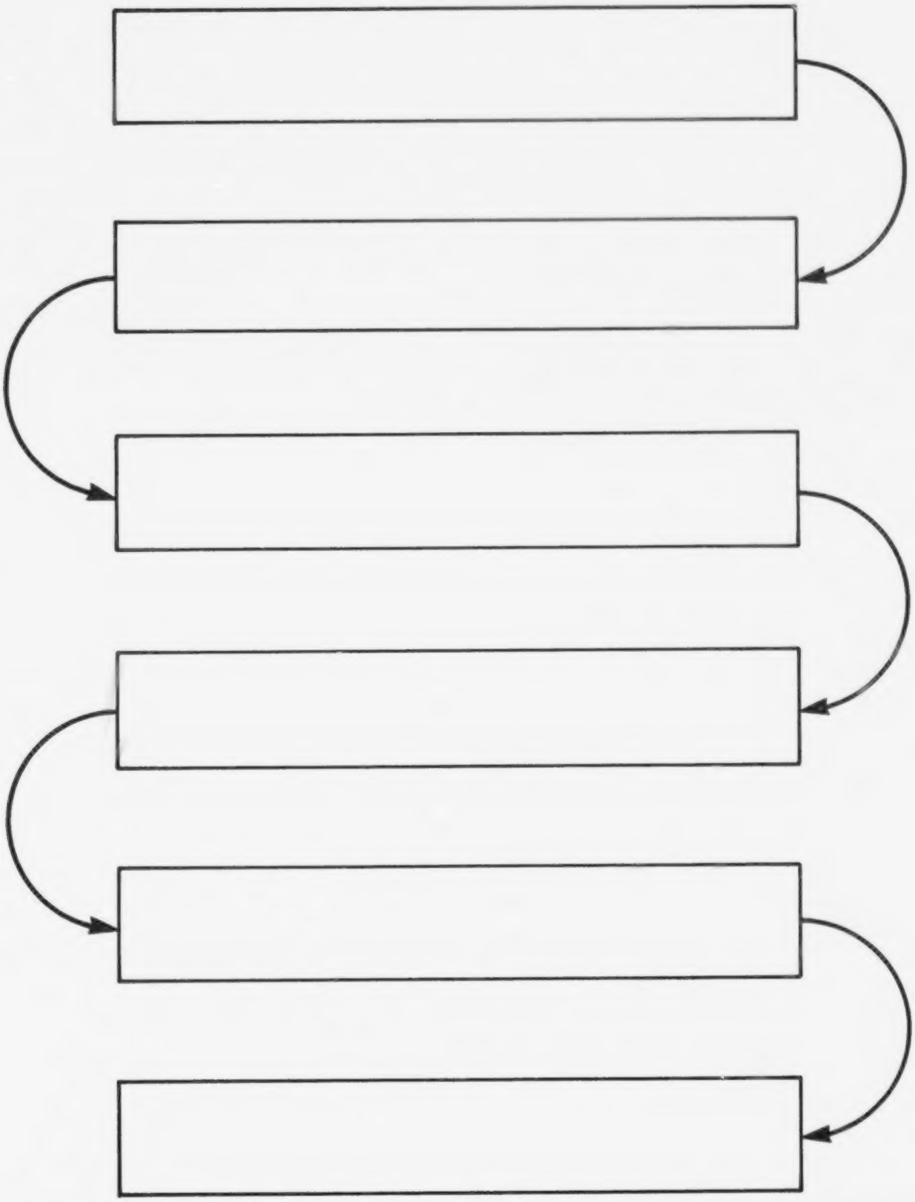
3. Your child waits until Sunday evening to begin homework. She then stays up late and is grouchy and is more susceptible to colds for a few days. Plan a program or strategy to help.

4. Your child's room is always a mess. Plan a program to help.

5. Your teenager has always handled his own asthma management well. Now that he is 14, he neglects his regular medicine and overuses his neb. Plan a program or strategy to help.

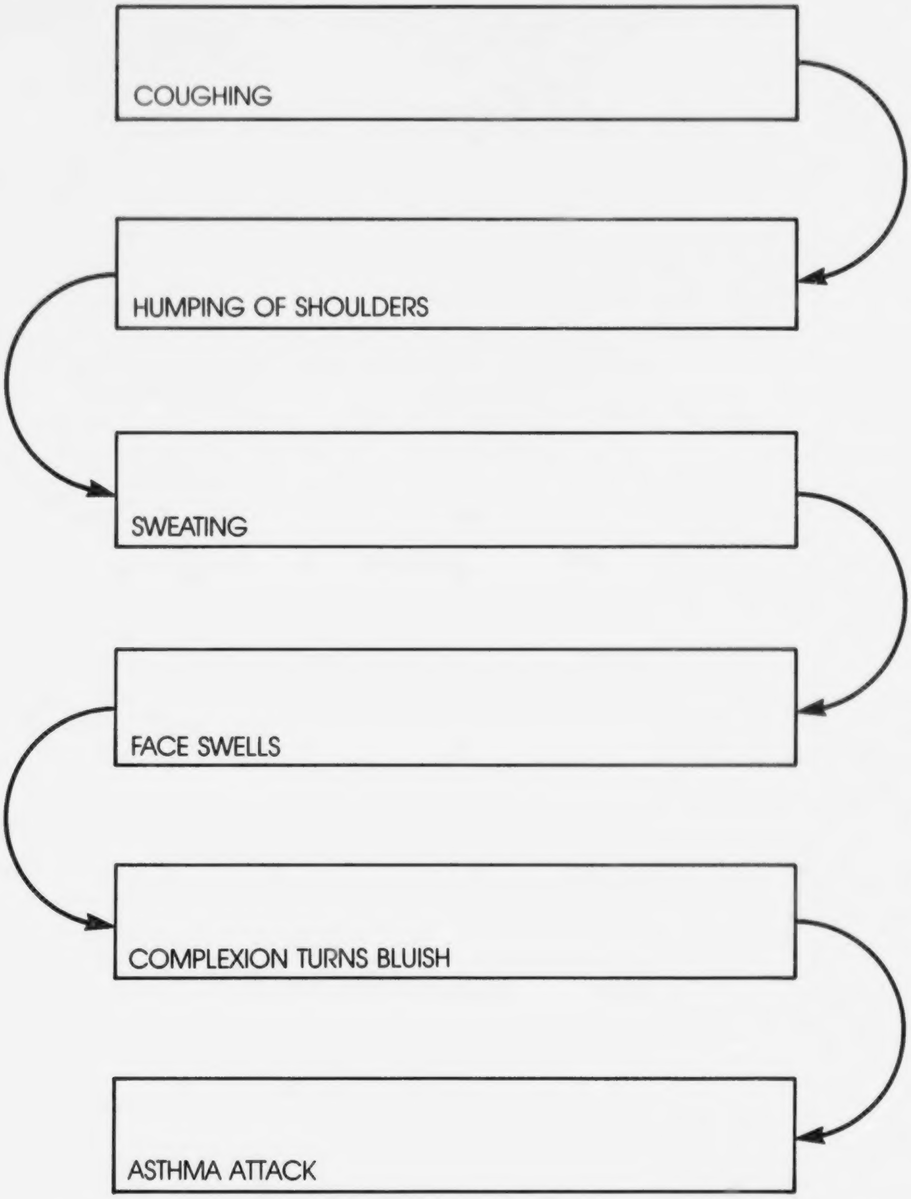
6. Your child always waits until the last minute to take preventive measures to avert an attack. Plan a strategy or plan to help.

FLOW CHART a.—
EXAMPLE OF BEHAVIORAL CHAIN

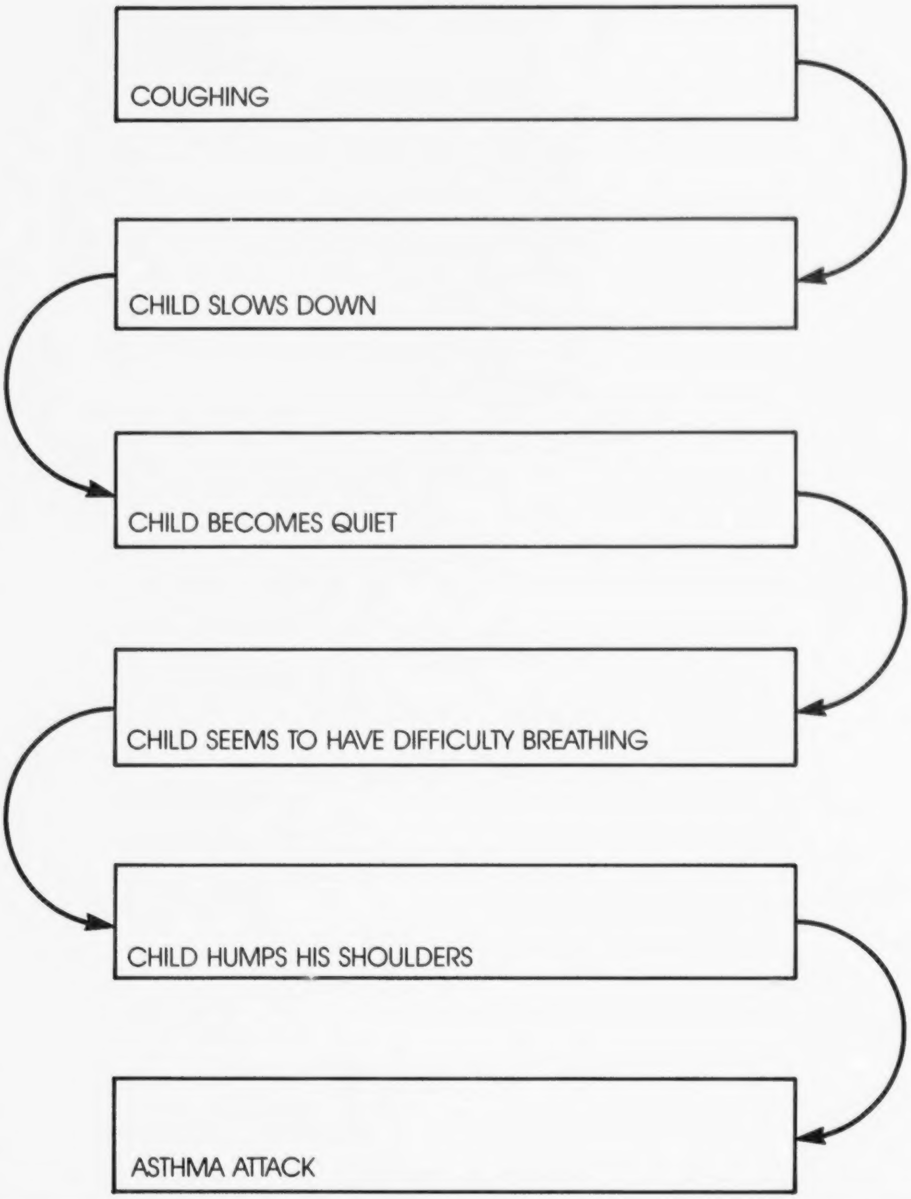


Parent Handout 4-4, p. 1

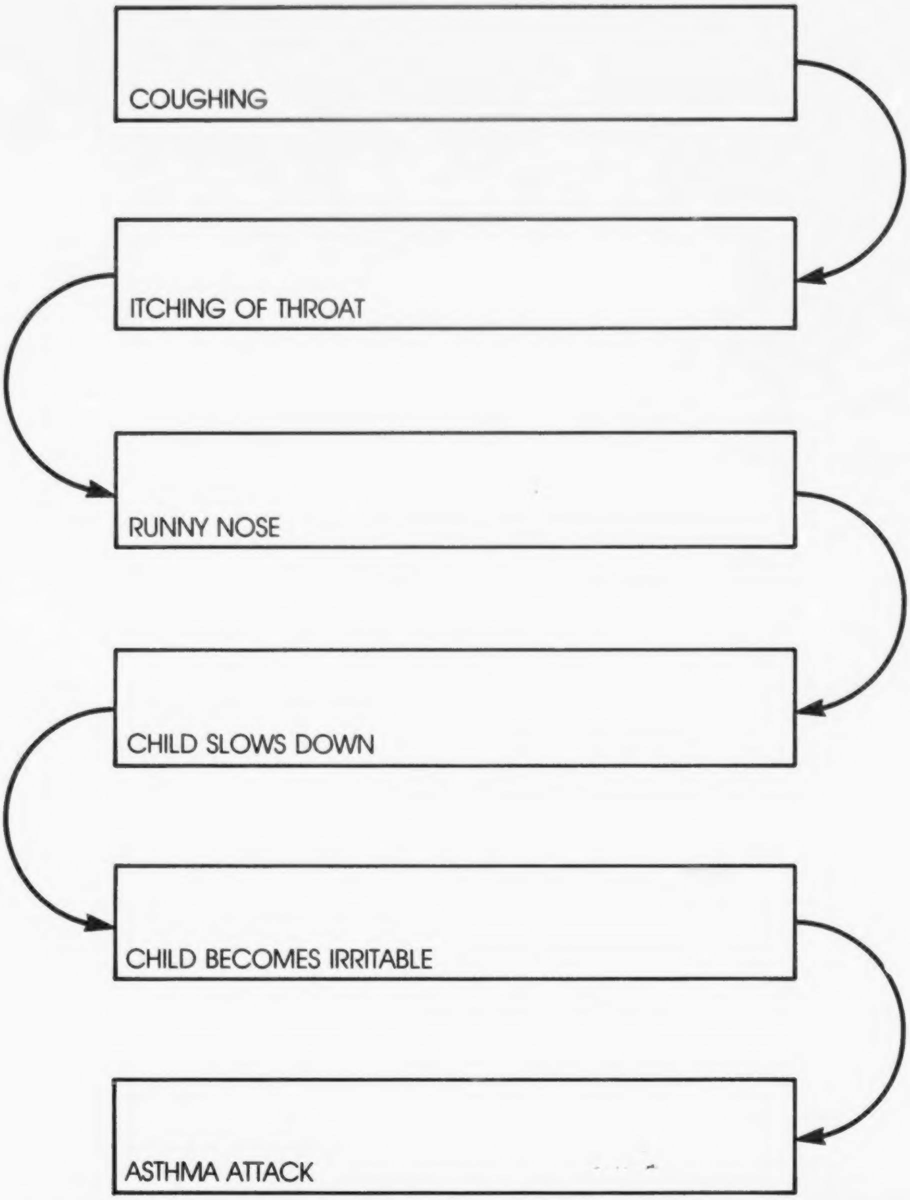
FLOW CHART b.—
EVENTS OCCURRING BEFORE ASTHMA ATTACK WITH ONE CHILD


COUGHING
HUMPING OF SHOULDERS
SWEATING
FACE SWELLS
COMPLEXION TURNS BLUISH
ASTHMA ATTACK

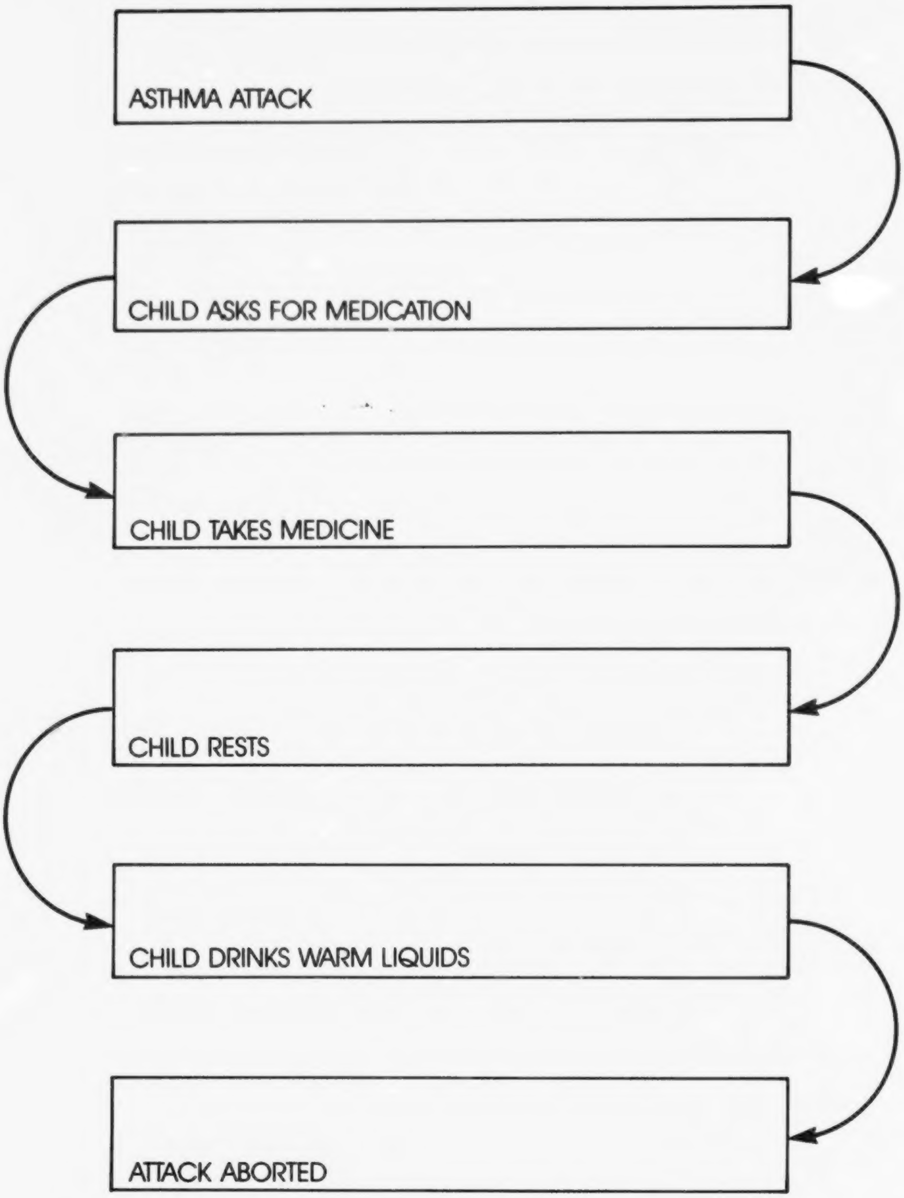
FLOW CHART c.—
EVENTS OCCURRING PRIOR TO AN ATTACK IN A SECOND CHILD


COUGHING
CHILD SLOWS DOWN
CHILD BECOMES QUIET
CHILD SEEMS TO HAVE DIFFICULTY BREATHING
CHILD HUMPS HIS SHOULDERS
ASTHMA ATTACK

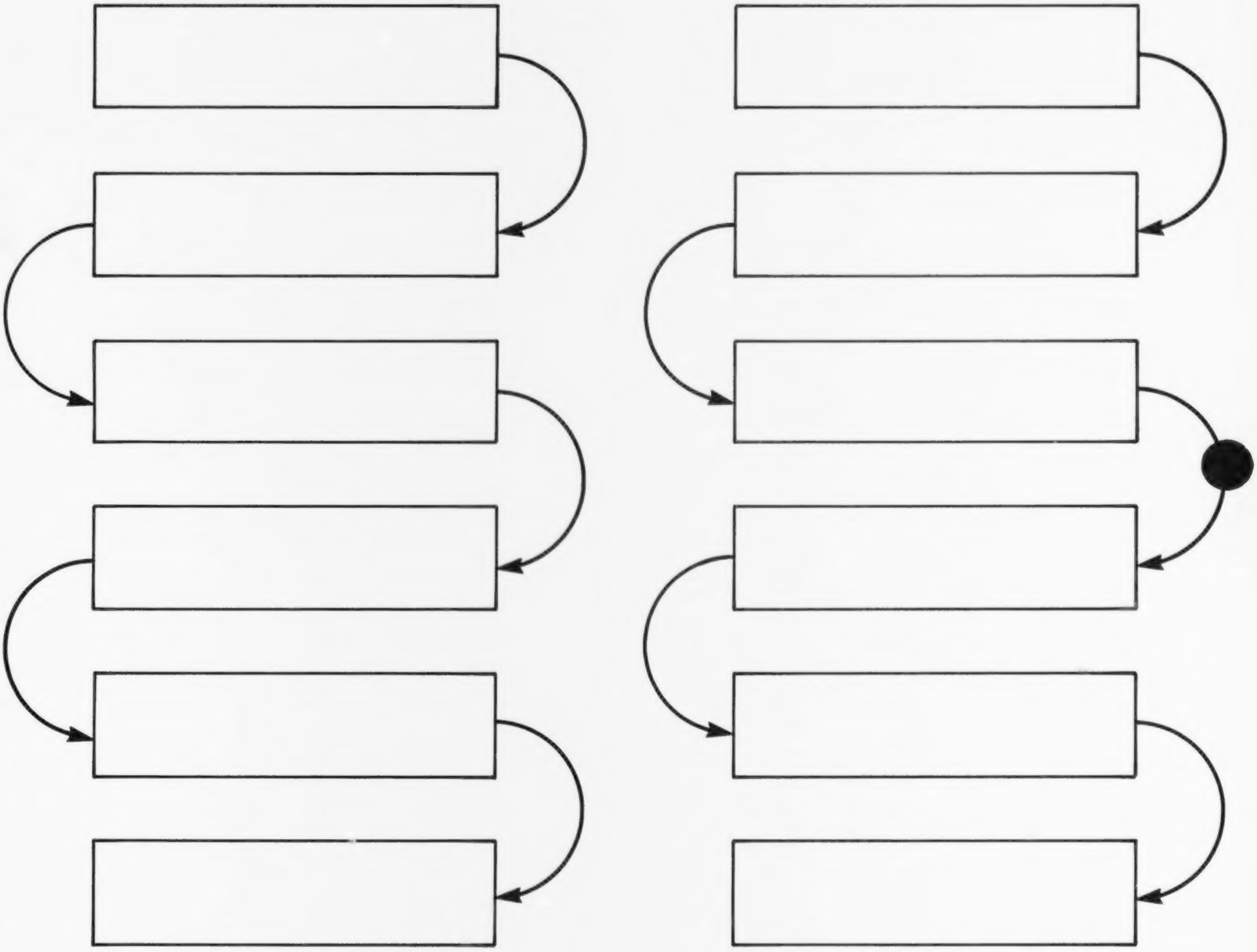
FLOW CHART d.—
EVENTS OCCURRING PRIOR TO AN ATTACK IN A THIRD CHILD


COUGHING
ITCHING OF THROAT
RUNNY NOSE
CHILD SLOWS DOWN
CHILD BECOMES IRRITABLE
ASTHMA ATTACK

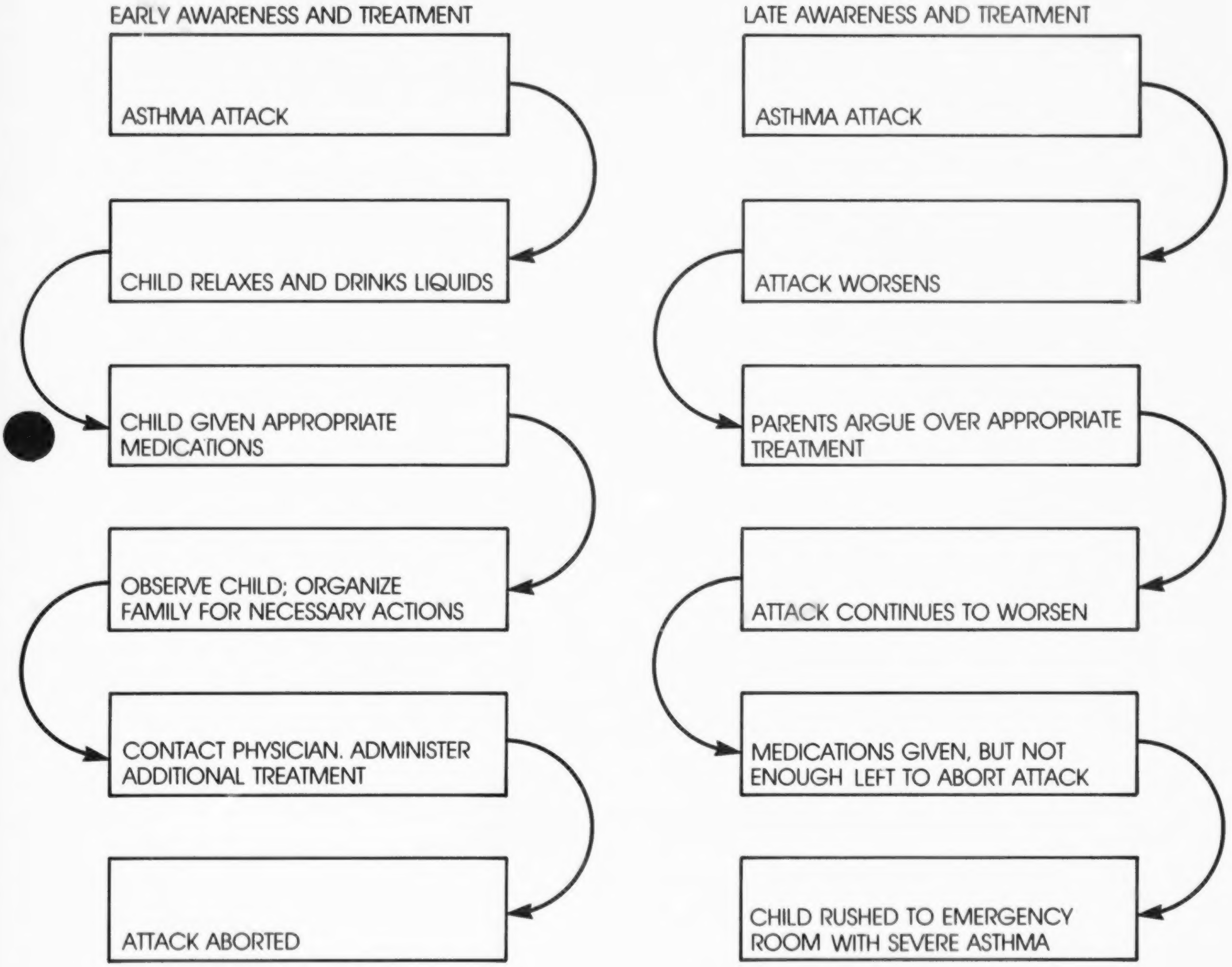
FLOW CHART e.—
EVENTS OCCURRING PRIOR TO AN ATTACK IN A FOURTH CHILD


ASTHMA ATTACK
CHILD ASKS FOR MEDICATION
CHILD TAKES MEDICINE
CHILD RESTS
CHILD DRINKS WARM LIQUIDS
ATTACK ABORTED

FLOW CHART f.—
CHART SHOWING TWO CHAINS OF RESPONSES

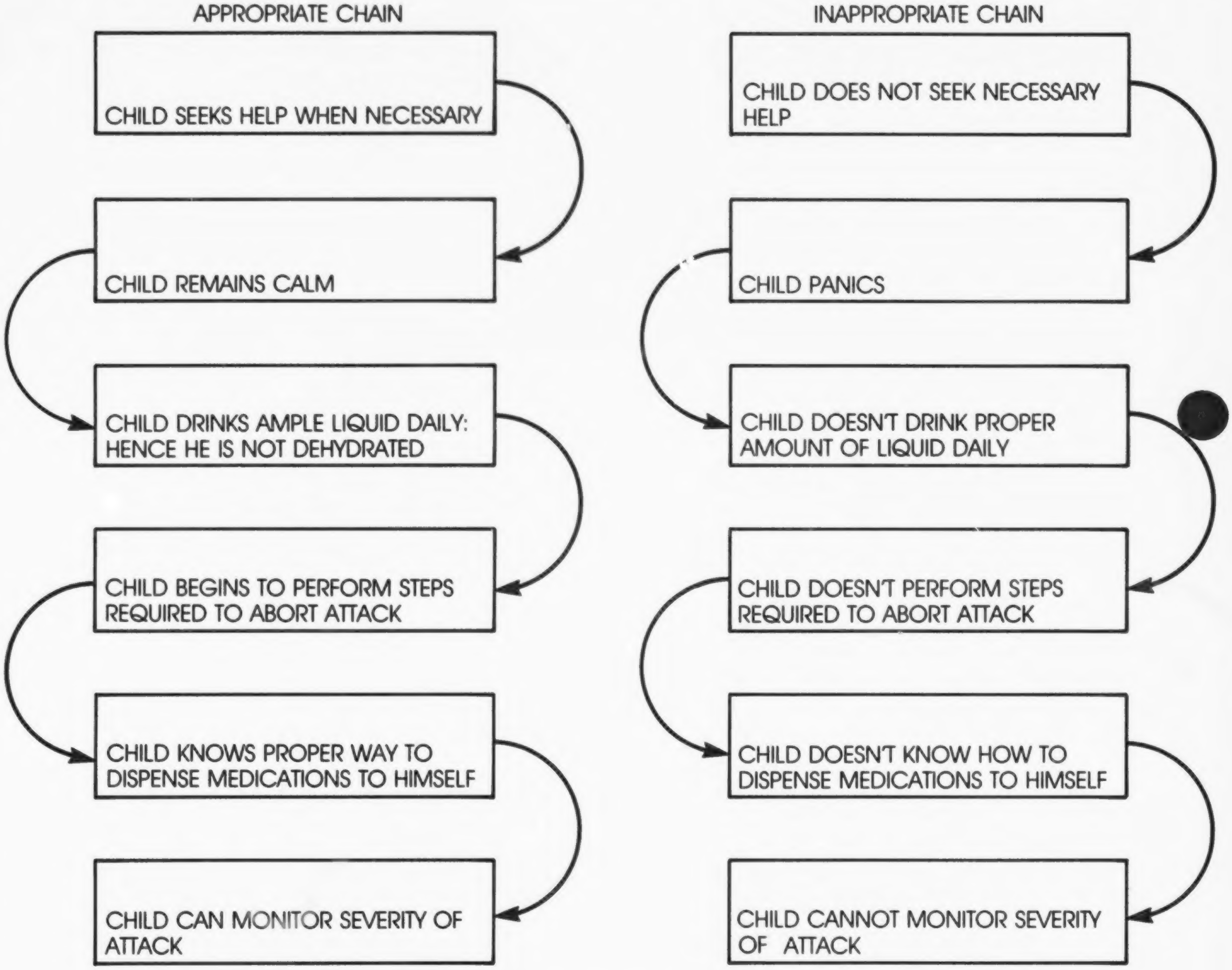


FLOW CHART g.—
CHAINS DEPICTING DIFFERENCES IN AWARENESS AND TREATMENT OF AN ASTHMA ATTACK

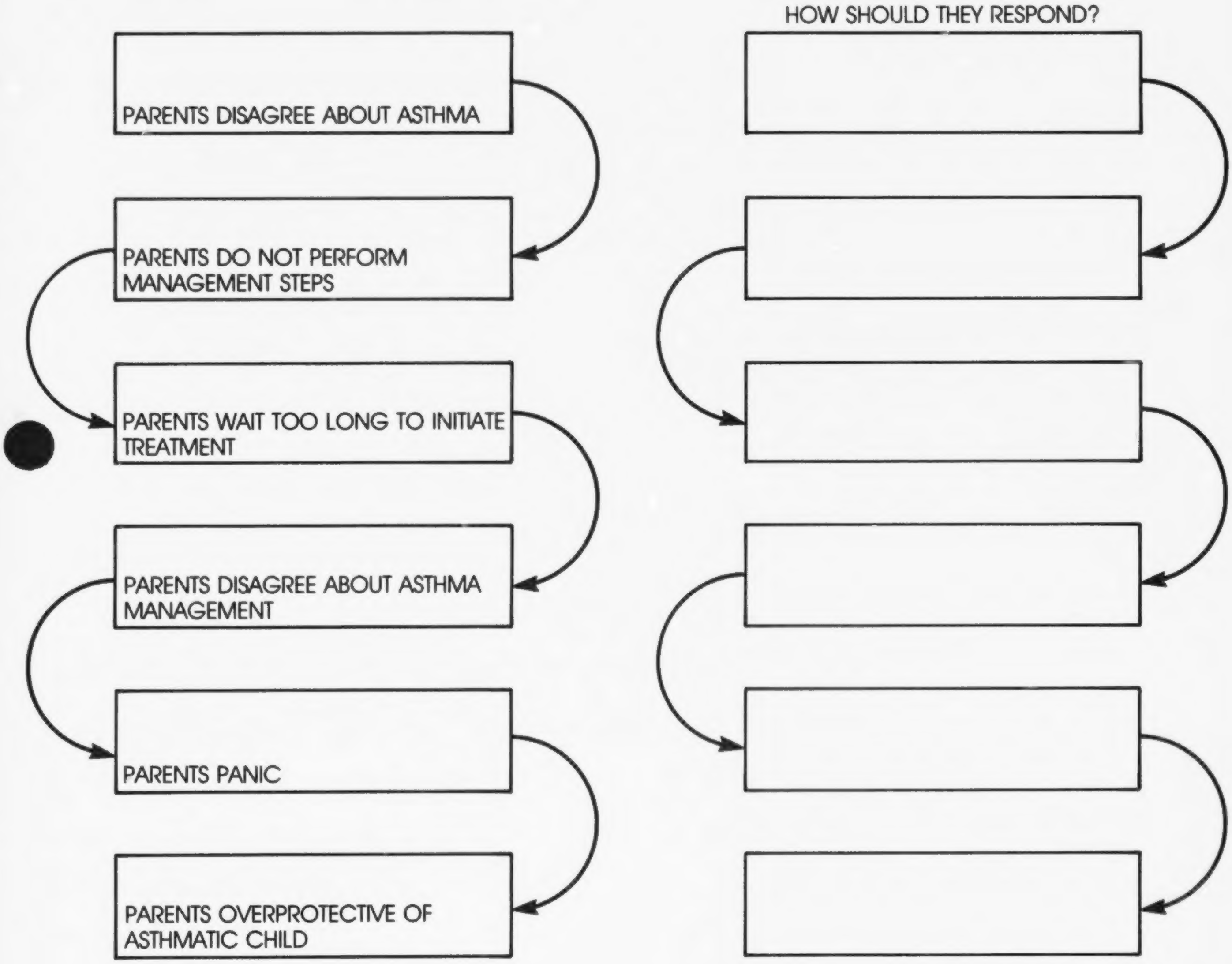

EARLY AWARENESS AND TREATMENT
ASTHMA ATTACK
CHILD RELAXES AND DRINKS LIQUIDS
CHILD GIVEN APPROPRIATE MEDICATIONS
OBSERVE CHILD; ORGANIZE FAMILY FOR NECESSARY ACTIONS
CONTACT PHYSICIAN. ADMINISTER ADDITIONAL TREATMENT
ATTACK ABORTED
LATE AWARENESS AND TREATMENT
ASTHMA ATTACK
ATTACK WORSENS
PARENTS ARGUE OVER APPROPRIATE TREATMENT
ATTACK CONTINUES TO WORSEN
MEDICATIONS GIVEN, BUT NOT ENOUGH LEFT TO ABORT ATTACK
CHILD RUSHED TO EMERGENCY ROOM WITH SEVERE ASTHMA

FLOW CHART h.—

APPROPRIATE AND INAPPROPRIATE WAYS A CHILD CAN RESPOND TO AN ASTHMA ATTACK

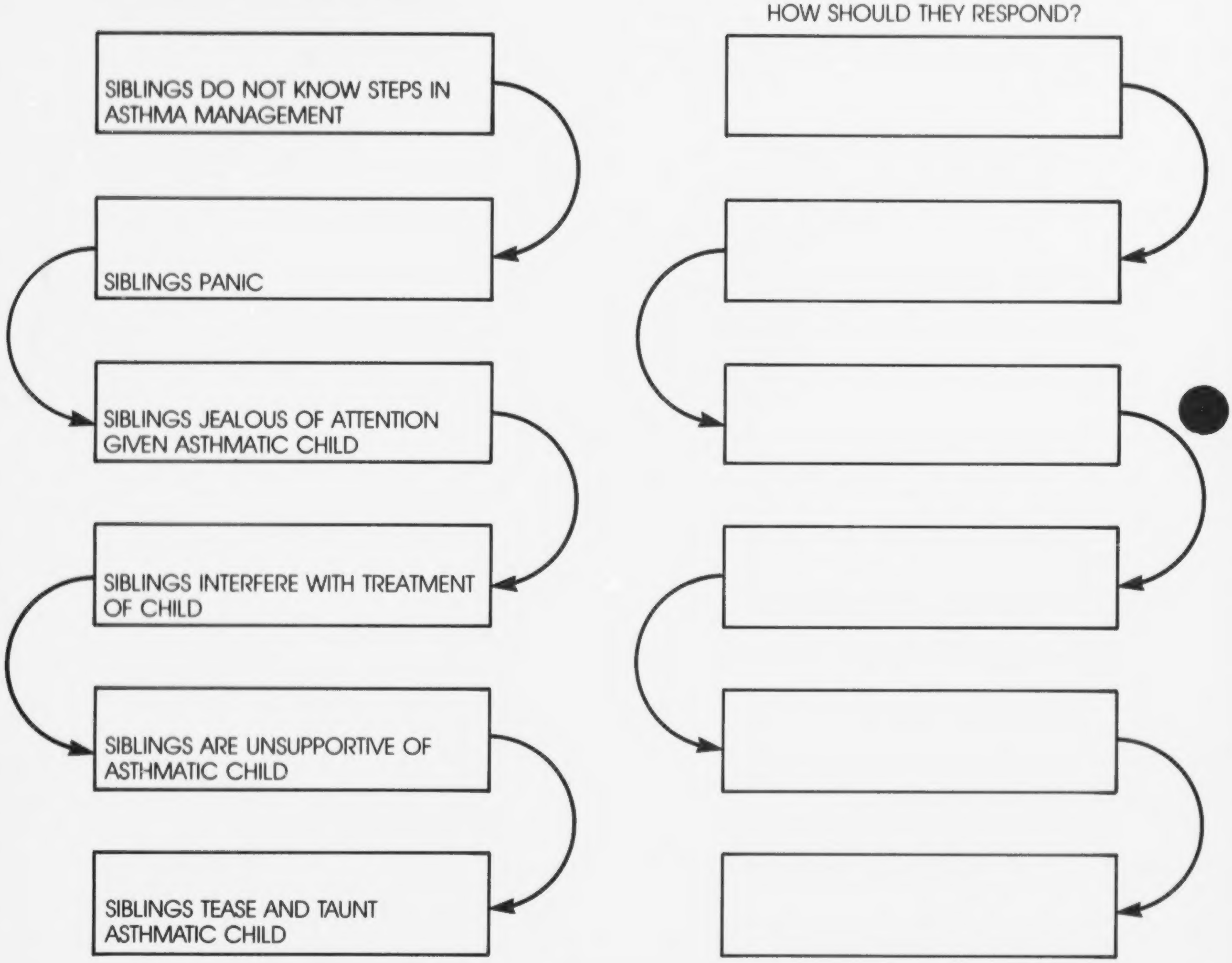

APPROPRIATE CHAIN
CHILD SEEKS HELP WHEN NECESSARY
CHILD REMAINS CALM
CHILD DRINKS AMPLE LIQUID DAILY: HENCE HE IS NOT DEHYDRATED
CHILD BEGINS TO PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD KNOWS PROPER WAY TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CAN MONITOR SEVERITY OF ATTACK
INAPPROPRIATE CHAIN
CHILD DOES NOT SEEK NECESSARY HELP
CHILD PANICS
CHILD DOESN'T DRINK PROPER AMOUNT OF LIQUID DAILY
CHILD DOESN'T PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD DOESN'T KNOW HOW TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CANNOT MONITOR SEVERITY OF ATTACK

FLOW CHART i.— CHAIN OF INAPPROPRIATE BEHAVIORS BY PARENTS IN RESPONSE TO A CHILD'S ASTHMA


HOW SHOULD THEY RESPOND?
PARENTS DISAGREE ABOUT ASTHMA
PARENTS DO NOT PERFORM MANAGEMENT STEPS
PARENTS WAIT TOO LONG TO INITIATE TREATMENT
PARENTS DISAGREE ABOUT ASTHMA MANAGEMENT
PARENTS PANIC
PARENTS OVERPROTECTIVE OF ASTHMATIC CHILD

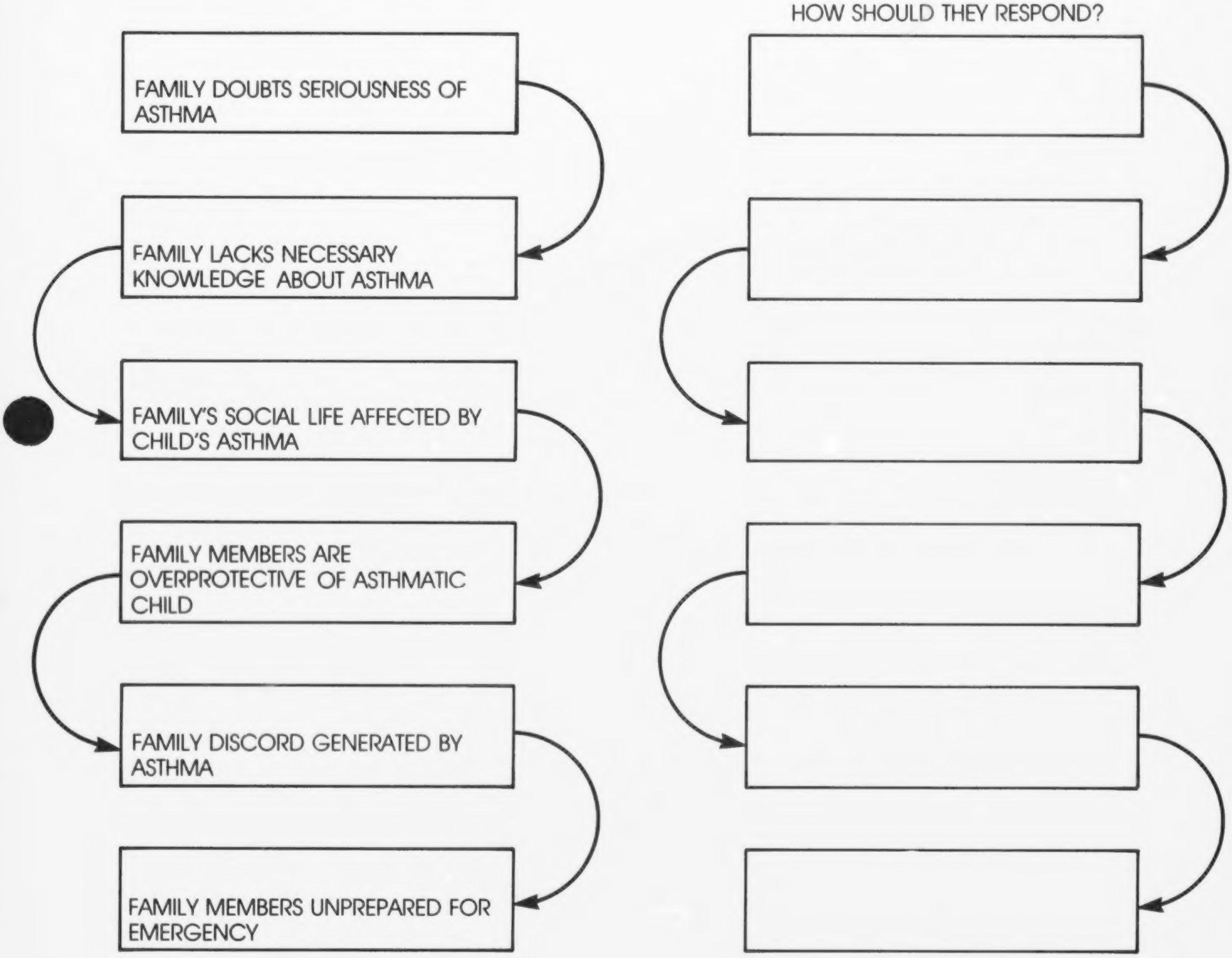
FLOW CHART j.—

CHAIN OF INAPPROPRIATE BEHAVIORS BY SIBLINGS IN RESPONSE TO AN ASTHMA ATTACK SUFFERED BY A CHILD WITH ASTHMA

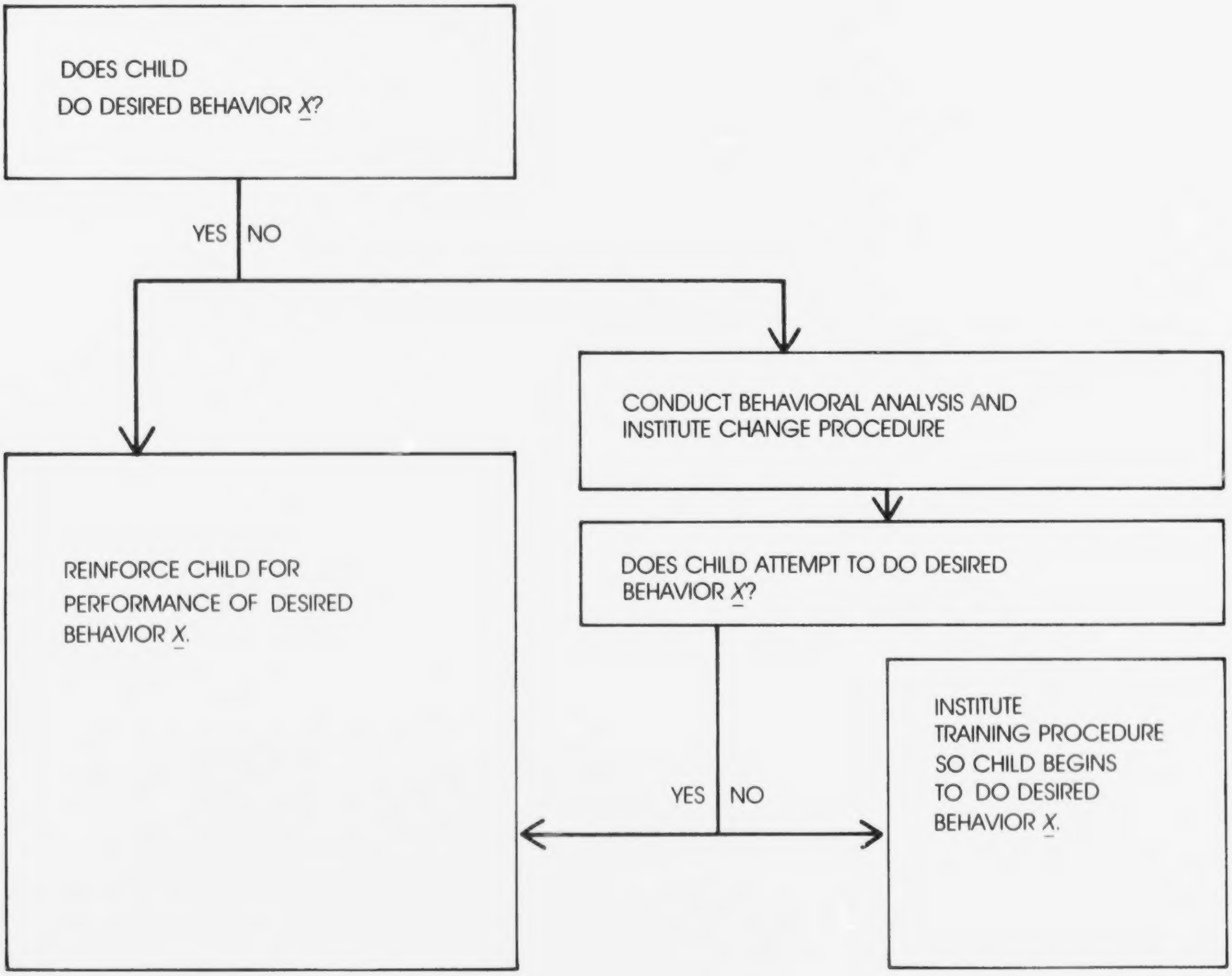

HOW SHOULD THEY RESPOND?
SIBLINGS DO NOT KNOW STEPS IN ASTHMA MANAGEMENT
SIBLINGS PANIC
SIBLINGS JEALOUS OF ATTENTION GIVEN ASTHMATIC CHILD
SIBLINGS INTERFERE WITH TREATMENT OF CHILD
SIBLINGS ARE UNSUPPORTIVE OF ASTHMATIC CHILD
SIBLINGS TEASE AND TAUNT ASTHMATIC CHILD

FLOW CHART k.—

CHAIN OF INAPPROPRIATE BEHAVIORS BY FAMILY MEMBERS IN RESPONSE TO A CHILD'S ASTHMA


HOW SHOULD THEY RESPOND?
FAMILY DOUBTS SERIOUSNESS OF ASTHMA
FAMILY LACKS NECESSARY KNOWLEDGE ABOUT ASTHMA
FAMILY'S SOCIAL LIFE AFFECTED BY CHILD'S ASTHMA
FAMILY MEMBERS ARE OVERPROTECTIVE OF ASTHMATIC CHILD
FAMILY DISCORD GENERATED BY ASTHMA
FAMILY MEMBERS UNPREPARED FOR EMERGENCY

FLOW CHART I.—
PROBLEM SOLVING FLOW CHART


DOES CHILD DO DESIRED BEHAVIOR X?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR PERFORMANCE OF DESIRED BEHAVIOR X.
DOES CHILD ATTEMPT TO DO DESIRED BEHAVIOR X?
YES
NO
INSTITUTE TRAINING PROCEDURE SO CHILD BEGINS TO DO DESIRED BEHAVIOR X.

REPORT OF ASTHMA EPISODE ATTACK

Name of Child ______________________ Date __________

Name of Informant ______________________

1. Circle the degree of severity of this episode.

1	2	3	4	5
Mild	Moderate		Severe	

2. Does the child take daily medications? Yes ______ No ______

3. If yes, had the child taken all doses on time in the last 24 hours?
Yes ______ No ______

4. Where did the episode occur? Home ______ School ______ Outside ______
Work ______ In bed ______ Other (describe) ______________________

5. Time that episode occurred: ______________

6. Check the factors you think caused the episode.

____Allergy ____________
(specify)
____Cold or infection
____Cold weather
____Coughing
____Crying
____Damp or high humidity
____Dust
____Excitement
____Laughing
____Over-exertion
____Not taking medicine
____Pollution
____Smoke
____Sudden change in weather
____Tired
____Upset
____Wind
____No idea

Other (describe): ______________________

7. Check what the child was doing before the episode.

____Doing a quiet activity
____Playing
____Sleeping
____Running
____Don't know

Other (describe): ______________________

8. Was the child upset by the episode? Yes ______ No ______
If yes, describe: ______________________

9. Did the child use any medication for this episode? Yes ______ No ______
If yes, check the type(s) used:
____Neb Name: ______________ Dosage (2 whiffs = 1 dose): ______
____As needed pill(s) Name: ______________ Dosage: ______

WEEKLY ASTHMA DIARY

Name of Child ______________________ Dates ________ to ________

Name of Informant ______________________

Part I: GENERAL PHYSICAL CONDITION OF CHILD

Check your impressions of the patient's daily condition

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Date:	____	____	____	____	____	____	____
No asthma							
Mild asthma							
Moderate asthma							
Severe asthma							

If any of these
boxes are checked,
use a report form.

If asthma was continuous this week, check here ____

Part II: PEAK FLOW AND MEDICATIONS DATA

Write in the best of three blows obtained with the peak flow meter:

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Morning							
Evening							

List medications and write amounts taken daily: ______________________

____

If the child takes as needed medications only, note here whenever these medications are used:

____

____

Parent Handout 4-6, p. 1

WEEKLY ASTHMA DIARY, PG. 2

When the child takes daily medications, fill out the MEDICATIONS SCHEDULE below according to the following code:

1 – Child took medications on schedule (includes plus or minus ½ hour)
2 – Child was over half an hour to 2 hours late in taking medications
3 – Child was 2 to 4 hours late in taking medications
5 – Child missed medications entirely

MEDICATIONS SCHEDULE

List each scheduled medications time in a separate box below:

	Mon	Tues	Wed	Thur	Fri	Sat	Sun

Part III: ASTHMA MANAGEMENT

Check all the activities that occurred this week:	Amount for each checked activity* I paid	Insurance paid
Prescription filled		
Had allergy shot		
Visited doctor:		
Regular apppointment		
Emergency visit		
Lab work		
Went to hospital:		
Admitted		
Emergency room treatment		
Transportation used for asthma management		
Loss of parent(s) work time		
Other (describe)		

*If cost is estimated, please write the letter "E" after your figure.

PARENTS' SESSION FIVE

ANTECEDENT CONDITIONS

GOALS

- To examine and discuss potential problem areas that exist and happen before an asthma attack occurs.
- To help participants recognize patterns of asthma attacks.
- To gain control over antecedent conditions.

RESOURCES

Leader Background Material:
    Learning Medication Compliance Habits
    Medication Compliance
    Don't Be Shy: Ask Questions
    Asthma Triggers
    Early Warning Signs of Asthma
    Annotated Checklist: Antecedent Conditions
    Leading Questions for Discussion
    Discussion of Flow Charts
    Leading Relaxation Exercises

Handouts:
    Antecedent Conditions Checklist
    Don't Be Shy: Ask Questions
    Environmental Asthma Triggers
    Flow Charts
    Practicing Relaxation Exercises

ACTIVITY LIST

Topic/Activity	Leader Background	Handouts
Welcome and Review		
Discussion of Antecedent Conditions	Annotated Checklist: Antecedent Conditions Leading Questions	Antecedent Conditions Checklist
Medication Compliance	Learning Medication Compliance Habits Medication Compliance	
Medical Instructions	Don't Be Shy: Ask Questions	Don't Be Shy: Ask Questions
Asthma Triggers	Asthma Triggers	Environmental Asthma Triggers
Early Warning Signs	Early Warning Signs of Asthma	
Signs as Asthma Worsens		
Signs of Severe Asthma		
Flow Charts (optional)	Discussion of Flow Charts	Flow Charts
Relaxation Exercises (optional)	Leading Relaxation Exercises	Practicing Relaxation Exercises

PARENTS' SESSION FIVE

ANTECEDENT CONDITIONS—TEACHING NOTES

Orientation for the Leader

The major activity of session 5 is a discussion of the antecedent conditions checklist. This list offers a framework for discussion by surfacing key issues.

The discussion is for participants' input and provides an opportunity for group members to help each other. The leader's job is to encourage everyone to speak up.

In sessions 5 through 7, parents have the opportunity to explore areas of personal and family interactions that affect asthma management. The purpose of these sessions is to allow parents to discuss issues that are important to them and to spend time on things they feel they need to talk about. By the fifth session, the group members should know each other and can feel comfortable talking with one another. It is important for the group leader to foster an open and supportive atmosphere because some of the problems involve airing of feelings that have never been surfaced before but need to be discussed. Informality and attention to the feelings of the group are important in these sessions. This may be a good time to review the section on fostering positive group dynamics in the Leader's Guide.

It is important to let the concerns of the group guide most of the discussion. Let them talk freely about their experiences and let them come up with their own answers and constructive solutions to problems that are raised. If someone raises an issue, refer it back to the group. Ask the group how they might handle the situation or what they think about it. Do not feel obliged to come up with an answer first each time. It is important to help parents see that they are experts on certain aspects of asthma management.

However, the leader may make suggestions if the group needs assistance or if they miss some important points. The background materials and annotated list provide ideas for approaches that are consistent with the spirit of self-management. Some ideas of leading questions to guide thinking in certain directions are also provided in the leader background material. These give ideas of the *kinds* of solutions that can be explored. Please note that the *leading* questions in the background material are *different* from the sample *opening* questions in the teaching notes. However, these are only suggestions to use in a pinch. Let the responses and interests of the group be the dominant force pulling the discussion.

Be creative. In your own sessions, you undoubtedly will come up with very different types of leading questions based on the experiences and value systems of each group, and groups will come up with their own innovative solutions.

Study the background information well so you can answer questions as they come up and add information that is not included in the handouts. In fact, it is a good idea to have a copy of the annotated list and the leading questions in front of you as you moderate the discussion. The solutions to issues given in the teaching notes are just *some* ways of handling them. The parents' groups may come up with others or may not find the given items a problem. Sometimes this session spills over into the next session.

During discussion, if one person dominates, the leader may have to draw out other members of the group. If discussion lags, the leader may move it along by asking leading questions or proceeding to the next item on the list.

Although many suggestions for handling situations are offered in the teaching notes and leader background, parents should not be made to feel that these approaches must be adopted or that they have been doing everything wrong. In all groups, it is important to be aware of possible feelings of guilt among parents. Often they have received much criticism and unwanted advice from relatives about the ways they should or should not be raising their child with asthma. It is important to reinforce parents for already doing many things right for their children and for caring and trying. Any suggestions must be made with delicacy or phrased generally.

The use of flow charts is an optional activity. If they have not been used in earlier sessions, one way of covering them is provided in the leader background.

Although there is a lot of material in the session, it is important to stress a few key points consistent with the concept of asthma self-management:

1. The time to treat an attack is *before* it happens. The more awareness parents have of what leads to an attack, the less crisis management is needed.
2. The need to follow good health practices such as:
   a. eating properly
   b. getting enough rest
   c. getting regular exercise
3. Compliance with the medication schedule.
4. Asking questions of the doctor and discussing issues related to compliance.
5. Prevent procedures including:
   a. recognition of early signs
   b. relaxation techniques
   c. taking medicines as prescribed
   d. environmental controls and other ways of controlling triggers
6. The importance of acting on early signs.
7. Normalizing family life.
8. Teating the child with asthma as a normal child, including normal discipline.

Welcome and Review

Are there any questions or comments from last week?

Did anyone use any of the techniques that we discussed last week?

What kinds of behavioral techniques worked for your child?

Discussion of Antecedent Conditions Checklist

introduction to antecedent conditions

Today we're going to talk about circumstances and events that occur *before* and *contribute to* an asthma attack. We call these antecedent conditions.

Distribute antecedent conditions checklist.

origin of checklists

These checklists were devised after numerous interviews and group discussions with parents and children with asthma. Concerns and problem areas were listed and then arranged into categories on the checklists as a way of organizing thoughts about asthma. Take a few minutes to read the checklist and check off the items that apply to your child's asthma.

Allow everyone time to read and check items with which they have concerns.

Let's spend a little time talking about each of the items on the checklist. By sharing ideas with each other, we can come up with ways to deal with these concerns. First, we'll talk about medication compliance.

Medication Compliance

sample opening questions

Who checked the first item?
What experience have you had with this situation?

Did anyone check the first item under Medication Compliance?
We will cover medication compliance first.
  Which item do you wish to discuss?
  What item is of most concern to you?
  Which item causes the most problems in your family?

discussion hints and procedures

Proceed with an item-by-item discussion. As discussion winds down, ask if anyone checked the next concern under the major heading.

Other comments to use to start a new topic include:
  Does this situation arise with your child?
  Is ______________________________ a problem in your family?
  Has anyone had experience with the next item?

To keep discussion moving and to bring in other members of the group, you can use responses such as:
  Why do you think this is happening?
  How could you deal with the situation?
  What techniques from social learning theory might be helpful?
  Who else has had experience with this? What did you do?
  What else could you do?
  Who has a different point of view?

To steer the group toward self-management solutions, use the leading questions from the background material, or use suggestions such as:

Have you ever thought of ______________________________ ?
What if you tried ______________________________ ?
What about ______________________________ ?
Some people have found ______________________________ to help.

Or use questions and comments of your own. Be sure to bring in as many members of the group as possible.

In general, let the group determine the pace and the topics of discussion. If questions or comments arise, refer them back to the group first.

Medication compliance is a common problem and may evoke a lengthy discussion.

Handling Issues That May Come Up

For problems related to medication compliance, it is important to find out why the behaviors are occurring and to deal with the underlying causes. Often this involves talking with the child and working out a solution together. Some possible reasons for noncompliance are included in the leading questions in the background material.

Medication Instructions

sample opening questions

Does any one have problems communicating with their doctor?
What specific problems do you have?
Can anyone suggest a solution?
How else could the situation be handled?
Has anyone had problems in the past? How did you solve them?
Does your child follow the doctor's instructions?
Do you encourage your child to do so?
Which item is of concern to your child?

discussion hints and procedures

Allow time for discussion. Encourage responses from everyone. Proceed item by item. Use the suggestions for moving discussion and bringing people in from the other sections and sessions.

handout

Distribute the handout Don't Be Shy, Ask Questions. Allow parents time to read it. Stimulate discussion around the main points. Ask if any of the suggestions would help in their situations. Ask if anyone has taken an assertiveness training course and what suggestions could be offered for tactful assertive responses with doctors and other medical personnel.

This handout may help you communicate more effectively with doctors so you can get answers to your questions.

Handling Issues That May Arise

Some suggested approaches are included in the annotated checklist, the leading questions, and other background material.

Getting clear instructions from the doctor often requires clear communication on the part of the parents and the patient. However, assertiveness from parents is also often necessary.

Asthma Triggers

introduction to triggers

The leader may have to refresh participants' memories about certain definitions and concepts.

Triggers are those substances or situations that bring on an asthma attack or episode. One goal of asthma management is, therefore, to eliminate or avoid as many bothersome triggers as possible. For this reason, it is important to determine specific triggers of your child's asthma and to work on them. It is not necessary to eliminate all possible triggers of anyone's asthma, just work on the triggers that affect your child.

sample opening questions

Which of these items are triggers for your children?

Does your child make efforts to avoid triggers or minimize exposure to his/her triggers?

How can you help your child avoid or minimize the effects of his/her triggers?

What other solutions can the group suggest?

Do you know what sets off your child's asthma?

Do you feel attacks happen no matter what?

Have you tried to keep a log to determine what led to an attack?

Does your child deliberately expose himself/herself to triggers?

Why does he/she do that?

What behavior change techniques might help this?

Do you find that attacks occur when multiple triggers are present?

Are you aware of environmental factors that may affect a child's asthma?

discussion hints and procedures

Allow parents' concerns to pull the discussion. Proceed item by item. Often parents will spontaneously comment on another's statement. Invite participation from all. Use suggestions for moving discussion and drawing in participation from previous sections.

handout

Distribute Environmental Controls handout.

This handout lists factors in the home environment that *may* affect a child's asthma.

Do any of these affect your child?

What can you do to help control some of these irritants?

Issues That May Arise and Some Ways of Handling Them

Normalization of Life

Sometimes dealing with asthma is so distruptive that an important part of management is to try to normalize family life. The family needs to understand that better control of the asthma will help. Learning the correct steps for managing asthma episodes decreases discord.

Not going to extremes to remove all possible triggers may reduce stress and restrictions. It is important to carefully determine the real triggers and work only on them. To avoid things or activities just because they might be triggers makes life quite restrictive. Also, parents and children may decide that certain activities are worth the risk of an attack. They may wish to engage in such activities after taking precautions such as pretreatment or being ready to handle an attack.

Parental Smoking or Cigarette Smoking by Visitors

For the child whose asthma is bothered by cigarette smoke, this situation can be a problem. Some families have worked out compromises whereby the parent agrees to smoke only in certain rooms and not in the room where the child may be. Other parents smoke only outside or when the child is asleep.

Sometimes parents or visiting relatives refuse to believe that the smoke bothers the child and continue to do so. This can be a problem. The relative may have to be told assertively about this fact or asked not to smoke in the child's presence. The child may have to practice ways of asking adults to stop smoking. The child may leave the room until the smoke clears away. Parents may install room air purifiers or put up signs, available from the American Lung Association, that say, "Thank you for not smoking."

If the child is visiting a household where adults are smoking, the child can ask them to stop or can tell them he/she must leave because the smoke bothers the asthma. Sometimes children have found that it is less disruptive to say nothing and to leave quietly.

The discussion of this topic is generally heated and lively. A number of solutions can be found, but sometimes no compromise can be reached.

Pets

If a child's asthma is aggravated by animal dander and if the family has a pet, this can be a problem. Families have worked out solutions in which the pet is kept outside or the child can play with the pet only outside. Sometimes, the family must give away the pet. However, sometimes this may cause so much unhappiness for siblings that giving away the dog or cat is not a workable solution. Pets may be restricted to only one or two rooms of the house and not allowed in the bedroom of the child with asthma. Sometimes a nonhairy pet may have to be substituted for the furry pet.

When visiting relatives or other families with dogs or cats, the child or parents can ask the family to clean the house before the visit to remove animal dander and can ask to have the pet put outside during the visit. If no special measures will be taken, the child may still be able to visit but should only stay a short while, maybe only 20 to 30 minutes.

This topic also provokes lively discussion and challenges parents to come up with solutions that are workable for all the family members involved.

If all known triggers are eliminated, will the asthma go away?

Parents often believe that if they remove all known triggers, the child's asthma will not occur again. This is, perhaps, an unrealistic expectation. Even if all triggers were removed, the child still would have some asthma attacks. The nature of asthma is such that not all precipitating events can be predicted with certainty, and no matter how hard parents try, some attacks will continue to occur. The purpose of trigger avoidance is to help reduce the number and severity of attacks.

Early Warning Signs

definition and introduction

Some groups may need to review the concept of early signs

Early warning signs of asthma are the physical and emotional changes that happen to most people with asthma BEFORE they actually begin to experience breathing difficulties that are severe enough to restrict their regular activities. These are the earliest signs of asthma and occur before there is audible wheezing. These signs are not the same for everyone, and even the same individual may experience different early signs at different times. Several signs may be noted at one time, or only one may be experienced at a time. Some of these signs are not infallible predictors of an attack, but rather indicators of the possibility of an attack.

sample opening questions

Does your child experience any of these mood changes *before* an attack?
Do any of your children show these changes in facial features?
Which of these early physical signs (such as stroking of the chin) are seen early on before an attack?
Do you notice any other early signs that appear before an attack begins to develop?
Does your child know what to do about early signs?

discussion hints and procedures

The purpose of this section is to alert parents to early signs and to have them look for the small changes that appear long before a full-blown attack is imminent. It may be helpful to have parents comment about the early signs they do recognize in their children.

Points to stress about early signs

When these early signs are noted, the child should:

1. rest and relax
2. drink liquids, preferably warm liquids
3. take medicine if it is prescribed

Encourage your child to do as much as he/she can to avert an attack. Give your child positive reinforcement for whatever steps he/she takes.

If mood changes are noted as an early sign of asthma, parents may need to realize that the grumpiness or irritability may not always be a sign of a misbehaving child but may be, sometimes, a forerunner of an asthma attack.

It is important for parents to help their children recognize their early signs and to encourage them to take steps early to avoid an attack.

Help parents try to discover the unrecognized very early signs that may alert the child and others that an attack may be building.

Signs As Asthma Worsens

introduction

Next on the checklist are physical signs you may notice as your child's asthma worsens.

sample leading questions

Have you ever noticed any of these signs?
What did you do?
What were your experiences?
When were your decisions right?
When were your hunches wrong?

discussion hints and procedures

The purpose of these items is to help parents recognize the progressive stages of an attack. Sometimes they may decide to call for medical help at this point, but at other times they may continue to handle the attack at home. Different experiences and decisions will be offered by parents on this topic. The leader should not tell parents when to call the doctor but should help them realize they must learn to develop their own criteria for making decisions.

Points to stress

If parents notice these signs of worsening asthma, they have the options of continuing treatment or calling the doctor if parents feel it is warranted. Generally, it is safer to get help earlier rather than later.

An important part of self-management is learning to develop your own sense of judgment and to think through situations. As parents and children gain more experience with self-management practices, they will learn to better judge when it is necessary to call the doctor and when they can feel safe continuing to handle the situation on their own. The first few times they may call the doctor at an earlier stage. However, as families gain more experience with controlling attacks on their own and with learning what signs are really serious for the child, they will find it less necessary to call the doctor. This sense and confidence will come with time and with interaction with the doctor.

If parents feel uncomfortable or concerned, they should not hesitate to call for medical advice or help.

Signs of Severe Asthma

You have probably all learned to recognize the signs of severe asthma. This list includes signs that have been seen in most children with asthma that has progressed to a serious stage. Some may apply to your children. However, there may be other signs not listed that appear in your child as well.

sample opening questions

Which of these signs have you noticed in your child?
What did you do? What were you feeling?
Who else has had an experience with this?

discussion hints and procedures

The list helps parents to distinguish the signs of late asthma. It may be helpful for parents to comment on the signs they have noticed in their children and on their timing of decisions on when to seek emergency treatment. Parents may have a lot of experiences to share.

Points to stress about signs of severe asthma

If parents notice any of these signs in their child, they should seek immediate medical help.

In these cases, parents should not be afraid to "bother the doctor" or to seek urgent treatment from an emergency room.

The late signs indicate that the asthma has progressed to a serious stage in which conventional home treatment does not work. Emergency medical treatments are necessary.

Flow Charts (Optional)

If the flow charts have not been used in earlier sessions, they may be introduced in session 5. Consult the sample scripts in the teaching notes of session 4 and the leader background for session 5. Selected problems from the flow charts in session 5 may also be used.

Relaxation Exercises (Optional)

If there is time and if you feel comfortable doing so, have the group do muscle group relaxation exercises in the last fifteen minutes of the session. Follow the script for Leading Relaxation Exercises in the leader background material.

The relaxation exercises take quite a bit of time and may be done after the regular session or on another day with those participants who elect to learn the technique.

As an alternative, give the handout Practicing Relaxation Exercises and have parents practice on their own at home.

Closing

We've talked about many important concepts for asthma management in this session. Be sure to familiarize yourself with the material in the handouts and the checklist. Try to recognize *your* child's antecedent conditions if an attack occurs this week. Also try to identify and eliminate triggers.

Have a good week, everyone!

LEARNING MEDICATION COMPLIANCE HABITS

Taking medicine regularly should become a habit, similar to brushing your teeth twice a day. As adults, many of us have habits that are so automatic that we aren't even aware of doing them. A goal of asthma self-management is to encourage the learning of habits to make asthma management as effortless as brushing your teeth. If you are trying to help your child learn these habits, think about how you learned some of your positive habits. Use your most painless, effective experiences as a guide.

You can use habits that are already developed to help learn new ones. Link the old habit and the new one. If the child does brush his/her teeth without reminders, try to link taking morning meds with teeth brushing. Start by leaving the correct dose in the drinking cup by the toothbrush. Later, build up to the child's taking the dose from the pill bottle, which is placed next to the toothbrush holder.

Breakfast is an ideal time for many families to begin the habit of taking regular medications without reminders. The pill bottle or single pill is placed beside the juice glass or on the breakfast plate. The important element is to link the pill taking with an already established habit.

MEDICATION COMPLIANCE

Medication compliance means following instructions about medicine: taking it when and in the exact way it was prescribed. Medication compliance is a serious problem with any chronic illness; most people have occasional problems in this area of asthma management.

If there is a problem with medication compliance, examine the factors that are contributing to the problem. Common problems are: taking medicine late, missing doses, and constant hassling over taking it. Common factors contributing to the problem are listed below with some suggestions for ways to deal with them.

Expense

The high cost of asthma medications sometimes causes families to neglect the daily routine of prescribed asthma medications. If this is the case, be sure to let the physician know. The physician may be able to help with samples and by prescribing less expensive forms of medicine. Help also may be available through clinics, hospitals, and social welfare programs. Use the telephone to shop around for the least expensive pharmacy to fill the prescriptions. Prices do vary.

Some families are able to receive Social Security supplemental benefits if the child is judged to be incapacitated by the asthma. Call the local Social Security office for details.

Taste

If the child objects to the taste of the medication, check with the physician to see if there is another medication with a better or different taste. If it is not possible or advisable to switch medication, praise the child when he/she does take the medicine without a fuss. Allow the child to have a favorite food or drink each time the medicine is taken without complaining. Ignore fussing or complaining behavior. If the problem persists, start a program for behavior change using LEARNING BEHAVIOR and STEPS FOR A BEHAVIORAL PROGRAM as resource guides.

Schedule

For many asthma medications to be effective in preventing attacks, it is important to keep a certain level of medication in the bloodstream at all times.

Therefore, medication such as the theophyllines are frequently prescribed every 6 hours. If a medication is so prescribed, it is vital that it be taken just that way. The doses taken after school and in the middle of the night are common problems. If one time or another is always missed, let the doctor know. He/she may be able to prescribe a longer acting form or another type of medication.

If that is not possible, problem solve with the child. Can the child assume the responsibility of the late night medicine by using an alarm clock? The adults must be prepared to check on the followthrough of this method for the first few weeks. For the after school dose, try having the child set an alarm clock in the morning. The ringing of the clock will remind the child after school of this afternoon dose. Be sure that the child gradually takes over the task of setting the alarm clock.

Any solution should allow the child to gradually become more responsible for his/her own medications. Solutions that leave the medication control with the adult are not solutions and will only cause problems as the child grows up.

If the child misses doses on a regular basis and experiences no physical problems, let the doctor know. Too much medication may have been prescribed originally, or the medication requirements may have changed for some reason. The doctor can determine the correct medication schedule only if he/she knows the full story, so be sure and communicate all pertinent information.

Age

Children are not born with a sense of responsibility. Rather, they must be taught it by graduated steps. An example of the graduated approach to medication responsibility is given with the LEARNING BEHAVIOR section. Constant nagging and reminding does not make anyone responsible, but rather the opposite. If nagging is noticed, sit down and think out a plan of action to change both the adult's and the child's behavior.

Adolescence becomes a time of testing limits and responsibilities of all kinds. The issue of medications frequently becomes a problem at this age. Natural consequences can effectively be applied with this age group. If the adolescent does not take the prescribed medication, then he/she must suffer the consequences of missed activities, time, and money, if that is appropriate to the situation. Once a plan of action is made for either older or younger children, *be consistent,* or the plan is doomed to failure.

Variable Nature of Asthma

People frequently stop taking their medicine because they are no longer noticing or being bothered by symptoms. That seems to make sense. If you are feeling okay, why take medicine? This question must be answered individually, but be sure that all the facts are known to the doctor before a decision to discontinue medications is made. Consider the idea that no symptoms may be felt because the medication is blocking symptoms. It may take a while for the effect of the medicine to wear off and the symptoms to return. A symptom-free time also may be experienced when contact with triggering substances is limited. This may be only a temporary phenomenon.

If it is felt that the prescribed medications are not needed, check with the physician before making changes. The physician may have special instructions about stopping the medications or reasons for continuing.

Improper, Unclear Instructions

Be sure that the physician's instructions about all prescribed medications are understood. Call the office if you have questions about your prescriptions or the conditions for taking the medicines. Write down any instructions that are complicated or may be forgotten. Use the DON'T BE SHY: ASK QUESTIONS handout from this session and the handout from session 2 as resources.

Social Stigma

Children sometimes are hesitant to take medications in front of their peers. Tell the child what the medicine is used for and how it works so that he/she can explain its use to friends.

Other solutions can be worked out with the child; spend time problem solving together.

Side Effects

Concern about medication side effects sometimes leads to a lack of medication compliance. Know what the side effects of the medications are, and use the medications correctly to help minimize them. Talk with your doctor about these concerns. The risk of side effects must be weighed against the benefits of the medications.

Indifference

If medication compliance is poor due to indifference, it is probable that the child is not responsible for medication management or that the child is not bothered by his/her asthma, or a combination of both. Indifference about medications probably indicates that the child or the family suffers few negative consequences when the medications are forgotten.

The adults may be taking all the responsibility for remembering the medications. In this case, there is no reason for the child to be aware or concerned about his/her medications: it is all being taken care of for him or her. If the child has no responsibility for his/her own medications, set up a program.

It also may be difficult for a child to understand the connection between his/her medication and the asthma. When the child feels good, why take medicine? If the child is not bothered by asthma, check with the physician before totally discontinuing medications. Explaining how asthma medications work and the variable nature of asthma to the child should help. The physician can also help with explanations and lend weight to the argument as an "authority."

DON'T BE SHY: ASK QUESTIONS

A well-informed patient can deal with his or her medical condition intelligently and independently. Don't be reluctant to ask your doctor or the office staff questions about medical procedures, treatments, anticipated benefits or side effects of medications, or financial matters. Before your appointment, write down questions you wish to ask. Bring the list with you on your next visit. If your doctor usually seems too rushed to answer questions, call the office ahead of time to request a longer appointment.

When asking your questions, be sure that you understand the answers. Ask the doctor to explain words or terms that you don't understand. Questions are not "dumb," they simply reflect lack of knowledge. Don't be reluctant to press the doctor for explanations. Most doctors want to help their patients understand all aspects of their illness and its management.

A doctor is providing a consumer service for which he or she is well paid. Part of that service is an obligation to educate and inform his or her patients. You should not be reluctant to question your doctor, just as you would not be reluctant to ask a service person, "What is wrong? What can be done to prevent this problem in the future?" The health and well being of your child is at stake.

Frequently you can save both time and money by calling your doctor's office to ask questions. Some doctors have a specific time each day for answering telephone inquiries. Others return patients' calls as time permits between office visits. In some medical practices, nurse practitioners or physician assistants are available and trained to answer most questions. A phone call can sometimes prevent an unnecessary (and expensive) office visit.

If you feel your doctor is unable or unwilling to answer your questions, you have several other information resources. Community or hospital libraries have many books and pamphlets about asthma and its treatment. Libraries in colleges and universities will have more technical information. The local chapter of the American Lung Association can provide information about asthma and other lung diseases. Your pharmacist can answer all your questions about medications either at the time you have your prescriptions filled or by telephone.

If you feel your communication problem with your doctor is insurmountable, you may wish to consider changing doctors. The local medical society can provide you with a list of asthma specialists. You can also ask for referrals from other doctors or other members of your family. Friends and acquaintances may also have recommendations. Call prospective new doctors to try to determine if they are more willing to answer questions and deal with your concerns more sympathetically than your current doctor.

ASTHMA TRIGGERS

Identifying Triggers

Triggers are those substances or situations that cause an asthma attack or episode. Theoretically at least, if all of an individual's triggers were eliminated, the person would never have any asthma symptoms and would never know that he/she had asthma. One goal of asthma management is, therefore, to eliminate as many triggers as possible. For this reason, it is important to determine as many triggers as possible.

Allergy testing, detailed medical histories, and a careful examination of environmental influences are ways to discover triggering factors. By careful observation, a family usually can determine most triggers.

It makes sense to spend some time trying to discover the major asthma triggers so that they can be eliminated or at least minimized as much as possible. In some cases, it is possible to totally eliminate the offending factor, such as switching from a feather to a Dacron pillow. In other cases, it may be necessary to take some preventive action that minimizes the effect of the triggers, such as taking a preventive dose of medicine before engaging in various activities or washing thoroughly after riding a horse.

Triggers can be divided into several main categories: allergic triggers, mechanical triggers, emotional triggers, colds and infections, and weather changes. Common allergic triggers include: animal dander, molds, pollens, feathers, and house dust. Irritants may bother everyone some, but they cause real trouble for others. Common irritants include: strong odors, smoke, dust, and pollution. Foods are infrequently asthma triggers. Mechanical triggers involve changes in breathing patterns. These changes occur as the result of exercise, sneezing, coughing, laughing, crying, and choking . Emotional triggers are situations where strong and stressful feelings are experienced.

It may be difficult to pinpoint any one trigger for a particular attack. Often a combination of triggers precipitates an attack. That is one reason that asthma seems so capricious and unpredictable. At one time in a stressful situation, no asthma is experienced. At another time when stress is experienced, the chest tightens and wheezing begins. Some possible explanations are (1) there was another precipitation factor, such as a room full of smoke; (2) the amount of stress was greater; and (3) the body was run down.

There are many other possible explanations. The examples above show that there are no exact reasons for every attack. When looking for patterns of asthma attacks, think about combinations of triggers, and do not expect to be able to find reasons for each and every attack.

If it is so difficult to pinpoint reasons for each asthma attack, why bother? The reason is to gain better control of the asthma. If the child and parents are aware of common triggers and can find ways to minimize their effects, the total impact of asthma can be lessened.

Dealing with Triggers

Stress

Learning to relax at will is a useful technique for people whose asthma is triggered in stressful situations. There are many different methods of doing this. PRACTICING RELAXATION (handout 5) is a resource for understanding one technique;

other techniques are covered in the books on the market that deal with stress and relaxation.

Some people are able to control their stress by imagining a soothing and relaxing scene. Others can take a few minutes and gain control over stress by doing calm and controlled breathing. People who have a past history of particular problems with stressful situations may need professional help to learn progressive relaxation to break old behavior patterns.

Many people today are discovering that scheduling regular physical activity as a part of their daily routine helps control the stress of everyday life. Every child should have regular physical activity every day. Do not rely upon gym classes to provide exercise. Many children do not have gym every day, and often the exercise provided in gym class is minimal and erratic. Try to plan family activities that involve physical exercise so that children can observe parents enjoying physical exercise.

Emotional Situations

If a child's attacks are directly linked to emotional situations, analyze what is going on in the situations. What factors contribute to the situation? In what ways can the situations be dealt with differently? If the problem is recurring and causes disruption for the child and family, consider seeking professional help to learn new ways to cope with emotionally charged situations.

Do not let the possibility of an asthma attack restrict either the child's fun or need for discipline. If the child knows that discipline will be disregarded when an attack is threatened, the child may learn to respond to discipline with an attack. If the child gets asthma each time that he/she gets excited, try to help the child temper the excitement and learn to relax. You cannot keep the child from getting excited; rather, help the child learn his/her own limits, and manage any attacks that do result. If self-management is to become a reality, the child must develop an inner sense of when to tone things down.

Exercise

Exercise itself can be a trigger for asthma. Many children with asthma have some form of exercise-induced asthma. This can lead to a lifestyle without regular physical activity. All children should participate in regular physical activity, starting off at a comfortable level and working progressively toward more difficult levels of strength and endurance. With the proper medications and understanding of one's own abilities, there is no reason why asthma should handicap a person's physical involvement.

Several Olympic athletes have had asthma and have won world class competitions. The key to enjoyment and mastery of physical activities for the child is to gradually learn his/her limits and have good medical advice about medication and general asthma management.

The child must learn his/her limits through experience. There will be episodes of wheezing and tightness during the process. That is part of the learning experience. Parents and teachers need to help the child learn to be capable of taking care of the ensuing episodes. The child will then be well on the way to asthma self-management and feel more confident about new activities.

Swimming is excellent physical exercise for people with asthma.

Any physical activity that a person desires to try should be tried with the normal precautions and provisions for attack management in case it is needed.

Conditions at Night

A problem with nighttime asthma may be related to the bedding material. Use plastic covers for mattress and pillow. Nighttime asthma could be occurring because of medications, so check with the physician about the evening medication schedule. A longer acting form of medicine may be tried. Using two pillows to elevate the head may help, but the back experts caution against this. Check the heating system and remove house plants.

Weather

The effect of cold weather or wind can be minimized by wearing a scarf over the face or nose. Many children protest being covered up with a scarf, but will pull a turtle- or cowl-neck shirt up over their nose and mouth. Use whatever works!

Respiratory Infections and Childhood Diseases

Colds and infections are common triggering factors for young children, especially those who have not yet finished second grade. Some physicians warn parents to expect a rough time for the first years of school. Children that young are coming in contact with many infectious agents for the first time. It will take several years before they build up a resistance to those agents that are present wherever there are groups of people.

Some precautions that can be taken include following good general health practices such as getting plenty of sleep, eating a balanced diet, getting regular physical activity, drinking plenty of fluids, avoiding situations where people may be sick, and promptly taking care of any colds or infections that do occur. Many physicians recommend regular flu shots for people with asthma.

Insufficient Medication in the Blood

When it can be anticipated that a known trigger will be encountered, preventive medication can be taken. Medications raise the threshold for attacks and should prevent asthma from being triggered most of the time. This prevention is ineffective when the medication is not taken, a large dose of an allergen or trigger is encountered, a number of triggers are experienced at one time, or the body's resistance is down.

If triggering factors cannot be identified, check with the physician. He/she may be able to suggest some ways that triggers can be pinpointed or recommend more testing to check possibilities.

If attacks occur repeatedly in spite of knowing triggering factors, consider whether early signs are being acted upon or if the child is waiting until the last minute to treat potential problems. Also, medications may need to be checked. It may be time to alter type or dosage.

EARLY WARNING SIGNS OF ASTHMA

Early warning signs of asthma are the physical and emotional changes that happen to most people with asthma BEFORE they actually begin to experience breathing difficulties that are severe enough to restrict their regular activities. These are the earliest signs of asthma and occur before there is audible wheezing. These signs are not the same for everyone, and even the same individual may experience different early signs at different times. Several signs may be noted at one time, or only one may be experienced at a time. These signs are not infallible predictors of an attack, but rather indicators of the *possibility* of an attack.

Common Physical Early Warning Signs

Coughing*
Shortness of breath*
Tightness in chest*
Chest hurts*
Decreased exercise tolerance*
Chest filling up*
Feeling tired
Headache
Itchy throat
Watery eyes
Feverish
Dry mouth
Clammy feeling skin
Facial color change
Bad breath
Sore throat
Scratchy throat
Heart beating faster
Sneezing
Head plugged up
Dark circles under the eyes
Quickening breathing
Stroking of chin or throat

*Most commonly mentioned early signs.

Common Emotional Early Warning Signs

Feeling spacey
Getting upset easily
Feeling nervous
Feeling sad, down
Getting excited easily
Feeling grumpy
Wanting to be alone
Feeling restless
Feeling mopey

It is obvious from the list that "early warning signs of asthma" are not uncommon and could be "early signs" of other illnesses or even of simple changes in mood. By learning the concept of early warning signs, the person with asthma will learn to be aware of how the body feels and what messages the body is giving. The list above was generated by asking many people with asthma how they felt before they had an asthma attack, or how they knew an attack was building. The list is, therefore, not definitive, but does represent many common signs.

Recognizing and acting upon early warning signs of asthma is an important aspect of asthma control, but it is a difficult concept for many children and adults. The key is to be aware of messages the body is sending and then to take preventive action if an asthma attack is suspected.

If one of these "signs" is noticed, the possibility of an attack should be considered. Whenever there is evidence that might indicate that an attack is building, slow down activities and drink plenty of fluid. These precautionary measures may help avert or lessen the severity of an attack and certainly can do no harm.

It is not uncommon for people to say that they have no early warning signs or indicators of asthma. In many cases, these people are simply unaware of variations in how they feel. Sometimes awareness of the existence of early warning signs enables people to pay attention to variations in how they feel and thus they can begin to recognize early warning signs.

Occasionally there are people who lack the mechanism by which the brain recognizes breathing difficulties. These people are said to have a decreased hypoxic drive. This reduction of hypoxic drive eliminates one way in which people with asthma perceive that an attack is coming. Laboratory tests can be performed that will determine whether hypoxic drive is lacking. But even people who lack hypoxic drive experience other warning signs. They must become conscious of other physical and emotional ways that their bodies communicate with them. The "emotional" early warning signs may play a more important part in early identification of asthma for these people.

Again, the important steps to take if early warning signs are experienced or suspected are: REST, and DRINK FLUIDS. Both of these activities can be done without much disruption of usual activities. If breathing problems do follow, take any medication that is prescribed for attacks and continue resting and drinking warm fluids. Attacks almost always come on gradually, and treatment at the earliest possible time is most likely to be helpful. Waiting for the attack to become full-blown usually means that it will take more time and treatment to get relief.

ANNOTATED CHECKLIST: ANTECEDENT CONDITIONS

This checklist is provided as an aid to the group leader conducting the discussion of the topics covered in this session. The annotated list consists of the same items that appear on the participants' checklist. Each item is followed by suggested solutions or sources of background information the teacher can use to answer questions, offer ideas to parents or direct the discussion. Many of the concerns are discussed in detail in the Leader Background Material for session 5. Capitalized items refer to specific sections of the background material. Space has been left for the leader to write down key words and reminders to help you with the discussion. Feel free to add anything that is useful in responding to questions and concerns or to note helpful solutions offered by participants in the asthma self-management groups.

Medication Compliance

Most of these concerns are discussed in detail in the MEDICATION COMPLIANCE section of the Leader Background Materials for session 5.

____ *Child tries to get out of taking medications.*
Help child understand reasons for taking medications.

____ *Child usually takes meds late.*
See SCHEDULE.
Problem solve with the child.
Discuss situation with the doctor.

____ *Child wants to take more medicine than necessary.*
Carefully explain how the medications work, the danger of overuse.

____ *Child usually needs to be reminded to take meds.*
Examine your own behavior and institute a behavior change program.

____ *Even though child not following medication instructions, asthma under control.*
See VARIABLE NATURE OF ASTHMA, INDIFFERENCE.
Check with the doctor

____ *Medications not controlling asthma.*
Check with physician; be sure you are following instructions precisely.

____ *Child tries to avoid taking meds in certain situations.*
See SOCIAL STIGMA.
Be sure child can explain the reason for taking medication to friends.

____ *Medications prescribed for middle of the night usually not taken.*
See SCHEDULE.
Discuss the possibility of prescribing long-acting medications with the doctor.

____ *Medication instructions not clear.*
Write down questions; call doctor's office for answers.
See DON'T BE SHY: ASK QUESTIONS.

____ *Child embarrassed to take meds in front of friends.*
See SOCIAL STIGMA.
Be sure child can explain the reason for taking medication to friends.

____ *Child and/or parents believe meds not important.*
See VARIABLE NATURE OF ASTHMA
Be sure parents and child understand how the meds work.
Discuss with physician.

____ *Family sometimes runs out of asthma meds.*
Examine reasons why; problem solve with child to find solutions
See EXPENSE.

____ *Child and/or parent concerned about medication side effects.*
See SIDE EFFECTS.
Be knowledgeable about medications; take as prescribed; talk with physician; make your own decisions.

____ *Other problems with medication compliance.* ____________________

Medical Instructions

____ *Doctor's instructions difficult to understand.*
See DON'T BE SHY: ASK QUESTIONS.
Write down instructions, questions, ask the doctor to confirm your written lists.
Role play with parents.

____ *Doctor's instructions don't help child stay healthy.*
See DON'T BE SHY: ASK QUESTIONS.
Write down instructions, questions, ask the doctor to confirm your written lists.
Role play with parents.

____ *Doctor's instructions don't help relieve asthma attacks.*
See DON'T BE SHY: ASK QUESTIONS.
Write down instructions, questions, ask the doctor to confirm your written lists.
Role play with parents.

____ *Doctor difficult to communicate with.*
See DON'T BE SHY: ASK QUESTIONS.
If a continuing problem, consider changing doctors.
Role play with parents.

____ *Child and/or parents don't have confidence in doctor's instructions.*
See DON'T BE SHY: ASK QUESTIONS.
Consider changing doctors if problem continues; ask friends, "experts," for suggestions and referrals.

Asthma Triggers

These items are discussed in greater detail in ASTHMA TRIGGERS section. Be sure you read that section before conducting group discussion.

____ *Child doesn't avoid his/her asthma triggers.*
Discuss consequences for nonavoidance; allow natural consequences.
Talk about asthma and triggers.

____ *Child tries to expose him/herself to his/her asthma triggers.*
Discuss reasons for wanting to provoke attack.

____ *Child doesn't know his/her asthma triggers.*
Talk about what you both have observed; point out specific situations when child has problems.
Keep records to help pinpoint triggers.

____ *Child refuses to part with family pet.*
Discuss consequences.
Suggest pet be outdoors instead of indoors.
Give pet to a friend.

____ *Friends and relatives smoke; seem not to believe that smoking is a real problem for someone with asthma.*
Firmly refuse to stay at their home if they persist in the presence of your child. Your visit may be extremely short in these circumstances.
If they visit your house, make it clear that all smoking must be done outside.

____ *Child often has attacks when:*

- ____ *Emotional (examples: nervous, afraid, excited, frustrated, guilty, angry, worried).*
  Examine reasons for emotions, how you react.
  Relax, problem solve with child.

- ____ *Punished.*
  Beware; discipline when necessary.

- ____ *Doing things like laughing hard, crying, sneezing, coughing, yelling, etc.*
  Work toward reasonable control.
  Children learn their limits through experience.

- ____ *Exercising or playing hard.*
  Learn reasonable limits; taking part in normal childhood activities may involve getting sick sometimes.
  Do not control for them.

- ____ *Asleep at night.*
  Use two pillows; cover mattress and pillow with plastic.
  Ask doctor about changing meds.
  Examine the medications schedule; is it being followed?
  Are there plants or animals present in the room?

____ *Wind or weather changes occur.*
Face mask, scarf, turtleneck may help in cold weather.

____ *Infections occur.*
Stay healthy; drink lots of liquids, rest, avoid people who are sick, get regular exercise, control stress.

____ *Child's triggers mainly determined by guesswork.*
Talk about what you both have observed; point out specific situations when child has problems.
Keep records to help pinpoint triggers.

____ *Attacks just happen no matter what.*
Check theophylline level if child using theophylline.
Discuss attacks with physician.
Be sure meds are being taken as prescribed.
Search for patterns.
Catch attacks early.

____ *Other*____

Early Signs of Asthma

See EARLY WARNING SIGNS section of Leader Background Material for session 5 and ATTACK MANAGEMENT in session 1.

Mood changes:
____ Aggressive
____ Quiet
____ Overactive
____ Grouchy
____ Tired
____ Easily upset
____ Other____________________

Change in facial features:
____ Red face
____ Swollen face
____ Dark circles under eyes
____ Perspiration
____ Pale face
____ Flared nostrils
____ Other____________________

Verbal complaints:
____ Fatigue
____ Tight chest
____ Neck feels funny
____ Don't feel good
____ Chest filling up
____ Chest hurts
____ Mouth dry
____ Other____________________

Breathing changes:
____ Coughing
____ Taking deep breaths
____ Breathing through the mouth
____ Other____________________

Other:
____ Stroking throat
____ Itchy chin
____ Other____________________

Begin treatment: Rest and relax.
Drink fluids, warm preferable.
Take medicine, if so prescribed for attacks.

Encourage child to do as much as he/she can for him/herself to avert attack.

Give child positive reinforcement for whatever steps he/she takes.

Signs as Asthma worsens:

____ Voice change
____ Fast breathing
____ Swollen face
____ Shallow fast breathing
____ Quickening pulse
____ Listless
____ Other____

Continue treatment.
Call doctor, if desired.
Take child to doctor's office if so indicated.

Signs of Severe Asthma:

____ Breathing from the neck up
____ Raised shoulders
____ Indentation at hollow of the neck
____ Expression of fear
____ Perspiration
____ Flared nostrils
____ Hands over head
____ Blue lips and/or fingernails
____ Labored breathing

Seek immediate medical help if you observe any of these items.

LEADING QUESTIONS FOR DISCUSSION—SESSION 5

Medication Compliance

Child tries to get out of taking medications.

- Why does the child try to get out of taking meds?
- Is it because he/she does not like the taste?
- Is it because he/she is embarrassed to take meds in front of friends?
- How can you deal with the underlying reason?
- How could you use positive reinforcement to encourage more regular medicine taking?

Child usually takes meds late.

- Why does your child do this?
- Is it because he/she is doing something else that is fun and forgets?
- Would a different schedule be easier to follow?
- If it is not possible to change the schedule, how can you and your child find ways to make it easier to take the meds on time?

Child wants to take more medicine than is necessary.

- Does the child panic during an attack and feel the need to take extra medicine?
- Does the child think more is better?
- Does he/she like the taste?
- Does the child get attention for taking medicine?

Child usually needs to be reminded to take medicine.

- Do the parents always remind the child anyway and the child has no incentive or need to try to remember on his/her own?
- Is it because the child *never* wants to take the medicine and parents must encourage it?
- Does the child not understand that medicines have to be taken regularly and on time?
- Does the child understand that the medicine will help to prevent an attack only if sufficient levels are in the blood?

Medications are not controlling the asthma.

- Have you checked with the doctor about this?
- Is it because the child is *not taking* the medicines regularly?
- Does the child have another illness that makes him/her run down and more susceptible to attacks? Does he/she need more asthma medicine because of the illness?

Even though the child is not following the medication instructions, the asthma is under control.

- Is the child over medicated? Should the amount of medicine be cut back anyway?
- Have you talked to the doctor about this?

Child tries to avoid taking meds in certain situations.

- Have you discussed this with your child to find out why?
- What are those situations?
- Why is it only in these situations?
- Is your child afraid of side effects?
- Is the parent conveying an unspoken message that the medicines are undesirable?

Medications prescribed for the middle of the night are usually not taken.

Can the schedule be changed so child does not have to take them in the middle of the night?

Is the child not waking up?

How can you and your child devise a way to have him/her wake up at the correct time?

Can anyone else offer a way to solve this problem if the schedule cannot be changed?

Medication instructions are not clear.

Have you tried to talk to the doctor or pharmacist?

Does your doctor not feel comfortable talking about this?

How are the instructions not clear:

Are they too vague on the label on the bottle?

Did *you* not understand the doctor's instructions?

Could you ask for more specific instructions to be put on the container?

Can you go back to the doctor to ask questions or get a clearer answer?

Child is embarrassed to take meds in front of friends.

Why does the child feel this way?

Is it because it makes the child feel different?

Does the child feel, "Why me?"

Do the kids call him/her a sickie or a druggie?

Is the child afraid friends will ask him/her to give them the medicine and the child will not do this?

Can you and your child decide on a place where he/she can take the meds without being noticed?

Can the child explain why he/she needs to take the medicines?

Child and/or parents do not believe that the medications are important.

Do they understand why it is important? (to prevent attacks, to maintain effective blood levels)

Is it because the child is not taking the medicines and still feels OK?

Is it because they fear the side effects?

The family sometimes runs out of medications.

Is it because there is not enough money?

Is it because parents forget to refill the prescription on time?

Is it because someone is disorganized?

Is it because parents are very busy and cannot take the time?

Is it because parents really do not believe the medications are necessary?

Medical Instructions

Doctor's instructions are difficult to understand.
- Have you tried talking to the doctor about this?
- Do you ask questions?
- Does the doctor have a foreign accent?

Doctor's instructions do not help the child to stay healthy.
- Is the doctor in a hurry?
- Is it because you do not offer information about the asthma or do not ask specific questions about your child?
- Do you fear switching doctors?
- Have you built up a relationship with the doctor so you can ask for advice or questions?

Doctor's instructions do not help to relieve asthma attacks.
- What are the instructions?
- Have you tried something else that works?
- What have other people tried in the same situations?
- What do you think might help or work better?

Doctor is difficult to communicate with.
- Is the doctor foreign? Does he have an accent that is difficult to understand?
- Does he/she put you off?
- Are you halfway out the door when you ask a question?
- Is the doctor on his/her way out when you ask a question?
- Would it help if you wrote your questions down beforehand so you could take less time with specific questions ready?

Triggers

Child does not avoid his/her triggers.
- Does the child know what his/her triggers are?
- Is the trigger something the child really likes to do?
- Is that activity or experience so important to the child that it is worth the risk of an attack?
- Can you let the child decide what is really more important in the situation?

Child tries to expose himself/herself to triggers.
- Does he/she do it for attention?
- Is the child trying to use asthma as a way of getting out of something like a test?
- Have you asked your child why he/she does it?

Child often has an attack when emotional.
- Can you think of ways to help your child *not* get so worked up?
- How can you help your child relax in these situations?
- Do you understand that, in these situations, the asthma is *not* in the child's head? That is, do you understand that emotions can be legitimate triggers and that the child is *not* creating these attacks?
- Do you understand that neither you nor your child are "crazy" because this happens?

Punishing the child leads to asthma symptoms.

Does the child misbehave frequently?

Are you afraid to discipline the child?

Do you feel you are a bad parent if you have to discipline the child and the child gets an attack? Do not feel this way if it is necessary.

This can be a very hard situation to deal with.

Child often has an attack when doing things like laughing hard, crying, sneezing, coughing, or yelling.

Does the child know his/her limits for these things?

Has the child gone beyond these limits?

Does the child understand that it is not always good to hold back emotions just because of *fear* of an attack?

Child often gets attacks after exercise.

Do you know there are things the child can do to prevent this:

a. Premedication.
b. Resting if he/she feels an attack coming on.
c. Talking to the doctor about this so he/she can prescribe a medicine.
d. Getting the doctor to change the schedule of daily medication so a peak amount is in the bloodstream during gym class.

Does the child know his/her limits for exercise?

Child's triggers are determined by guesswork.

Do you write down the circumstances leading to an attack immediately after one occurs to try to determine a pattern?

Do you or your child perform detective work by avoiding one suspected trigger at a time to see if it is really a trigger?

Are you consistent in your detective work making sure a trigger is really a trigger? (For example, just because the child drank chocolate milk once and got an attack, the chocolate milk may not be the real trigger. Maybe the child was excited at a party.)

Attacks just happen no matter what.

Have you pinpointed the real triggers?

Do you keep an asthma diary to record the events and conditions that precede attacks?

Have you talked to the doctor about this? The doctor may prescribe more medications.

Child often gets attacks at night.

Did he/she forget to take the medications and therefore was not protected because the blood level had fallen below the therapeutic level?

Are the windows left open at night during the pollen season?

Would two pillows help? This may keep the secretions from settling.

Would an air purifier in the child's room help?

Is the room very dusty?

Does the child sleep with a favorite stuffed animal that is very old and dusty?

Is the child's room in the basement where it is moldy?

Early Signs

Has anyone noticed any of these signs in their children?

Do any of your children ever show any of these emotional changes before an attack? If so, you should understand that your child is not being bad, but instead is experiencing an early sign of an attack.

How can you help your child stay in control of his/her feelings and the asthma?

Signs as Asthma Worsens

Have you ever noticed any of these signs in your children?

What led up to them?

What did you do?

Many people may decide to call the doctor at this point. Sometimes it turns out they can still manage the attack at home. At other times, they find out they should come to the hospital or doctor's office. As they gain more experience, they learn when they need to see the doctor and when they can control the asthma at home. When in doubt, call.

Signs of Severe Asthma

If your child displays any of these signs, seek medical help.

These are signs of late asthma, or an attack that has proceeded to a serious stage that requires medical attention.

Some late signs:
  The child is listless. (However, a merely tired child is an early sign.)
  The child's voice changes in sound.

DISCUSSION OF FLOW CHARTS—(Session 5)

Introduction for the Leader

The objective of this session is to teach class participants to break down the events surrounding asthma into component parts. Participants can then carefully analyze and change behavior so that their child's asthma can be better managed.

To facilitate this process, Dr. Thomas Creer has developed three types of flow charts. Two types of flow charts are introduced in this session; the third will be introduced next time. With the leader's guidance, class participants fill in the flow charts and learn to analyze their child's behavior. The script is written to parents of children with asthma; if class participants include children, change the pronouns appropriately, for example, "your child" to "you." Before using the flow charts, class participants will need to be familiar with the information in the handouts Early Warning Signs and Attack Management (session 1).

Script for Leading Discussion

behavior analysis and behavior change

In this session, we're going to spend some time learning how to analyze behavior. It should make events that frequently seem chaotic and beyond your control a little more logical and under your control. We'll examine events that surround asthma attacks and break them down into small 'parts' or steps. Then we can deal with the parts in a logical manner and put them together in new ways or add new skills and steps to come up with ways to manage your child's asthma. The three steps in this process are:

▌ **Write each step on board or flipchart.**

- Behavioral analysis—what are the component parts of a particular activity?
- Learning appropriate skills—what are the best ways of putting new behavioral components together or rearranging the steps to change the outcome?
- Performing appropriate skills—are the learned skills, such as new self-management steps, performed when necessary?

There are are several skills required to manage your child's asthma:

▌ **Write each on board or flipchart.**

things to do

a. Self-monitoring. What is initially important in asthma management is that you carefully observe or monitor your child's behavior or that the child becomes aware of his/her own behavior. In asthma, behavior awareness is important not only with respect to managing attacks, but in preventing some attacks from occurring. For example, by complying with medication instructions provided by the physician, your child may not only establish control over attacks, but also will prevent many from ever occurring. However, it is important for you and your child to see just how accurately he/she complies with the medication regimen.

b. Self-recording. It is equally important to record accurate and reliable information about the behavior observed. For example, it is important to record not only what medicine is taken but also how much and what time each dose is taken. The child can do this, but you can help at first.

c. Self-instruction. We might consider these as statements a person makes to himself to prompt him to take certain action, to guide him in taking that action, and to maintain performance. We all use self-instruction daily, whether we tell ourselves to complete a homework assignment or stop at a traffic signal. Self-instruction on the child's part is very important in the self-management of asthma. A youngster with asthma must instruct himself about what to do to avoid unnecessary attacks and on what to do in the event of an asthmatic episode. Thus, self-instruction underlies much of self-management.

self-instruction

There are two particular types of self-instruction a child might use to change either stimuli or responses. Each type merits a brief description.

▌**Write each on board or flipchart.**

Self-induced stimulus change: removing self from an unhealthy situation. A child may find he is in an environment where an attack is apt to be precipitated. For example, if the youngster is allergic to animal dander, he may find that being in the vicinity of a dog produces a sensation of tightness in his chest. When such sensations occur, the child may decide he requires a different environment; he can, therefore, attempt to change environmental stimuli by moving away from the animal. By doing so, the youngster is practicing self-induced stimulus change.

Self-induced response change: self control in activities or situations to avoid exceeding limits. The majority of asthmatic children reportedly suffer from exercise-induced asthma. Simply put, this means too much exercise may trigger attacks. To avoid exercise-induced attacks, the child must learn his limits with respect to physical activities. While the youngster wants to exercise to improve his health, he hopes to avoid exceeding a certain limit and inducing asthma. Only a child can recognize the threshold beyond which asthma is apt to occur; accordingly, only the youngster can change his responses by halting his exercise at a point to avoid attacks. This is what is meant by self-induced response changes.

behavioral chain flow chart

A useful tool for analyzing behavior is the flow chart which demonstrates a behavioral chain.

▌**Hand out flow chart 1 to class participants.**

All behavior consists of component parts that are like links in a chain.

▌**Point to boxes in flow chart.**

After an individual performs one behavior, he moves on to a second and so on. Behaviors are like links in a chain so that, by the time the last behavior link has been performed, the chain is complete.

The flow chart is used first to identify those links. Then we can learn appropriate skills to deal with the component parts of behavior, teach these skills, and encourage their use to manage behavior.

To illustrate how a flow chart works, write in 'Asthma Attack' as the final link in the chain shown in table 1. Now, think back and try to recall if your child exhibits particular behavior or physical signs prior to the occurrence of an attack.

▌**Give class time to think and discuss early signs.**

▌**Hand out flow charts 2, 3, 4.**

examples: inappropriate steps in attack management

These flow charts, numbers 2, 3, 4, illustrate the sequence of events leading to asthma episodes for actual children. As shown in flow chart 2, coughing was the first indication a child was about to experience asthma. The youngster then began to hump his shoulders; this action, in turn, was followed by sweating, swelling of his face, a change in his complexion, and then the asthma attack. Does this sound familiar? To many of you, it may. Others, on the other hand, may find your asthmatic child exhibits behaviors more like those suggested by other youngsters and their parents in flow charts 3 and 4. As noted, specific physical signs include a runny nose and coughing; specific behaviors include a youngster itching his throat, becoming irritable, and slowing down.

class activity and discussion

Let's take a few minutes now to complete the first flow chart. You may wish to use the early warning signs listed on the Antecedent Conditions Checklist I gave out earlier in this session to help you remember what usually happens when your child has an attack.

Allow about 5 minutes for completion of task.

Has everyone finished? Does anyone have questions about how the flow chart is used to build a sequence of events that leads to an asthma attack?

Have a short discussion of the behaviors and physical signs they came up with.

Hand out flow chart 5.

example: appropriate management of an attack

Flow chart 5 depicts steps taken by a youngster to successfully abort an attack. Here, the attack is the initial link and the halting of the episode is the final link in the chain. In between, the child performs such appropriate behaviors as asking for and taking prescribed medications, resting, and drinking warm liquid, the Attack Management Steps we discussed in session 1. These steps, when performed by the child, lead to the desired result: the stopping of the attack. Please note that this procedure is exactly the same as the one followed by physicians in treating an asthma attack. They will try one step, then a second, and so on until control has been established over the episode. This sequential approach to attack management offers the most efficient way to establish control over asthma.

example: exercise-induced attack

Hand out flow chart 6.

Flow chart 6 depicts the sequence of events that occurs prior to an exercise-induced attack. As noted, the child's face turns pale, which is followed by an observable change in breathing. These changes, in turn, precede audible wheezing and the child complaining of feeling tight. Finally, a full-blown asthma episode is experienced. The use of a form such as number 6 permits you to carefully track events that occur prior to an attack. Everyone should receive proper amounts of exercise, including youngsters with asthma. What is important is that they learn the limits of their exercise, and halt such activity when early warning signs are noticed and there is danger of an attack being induced.

discussion

Where in the behavior chain do you think the child could act to change the outcome? What behaviors would you substitute?

Permit class discussion and solicit suggestions, perhaps based on actions that worked in the past.

Ask the group to come up with new steps to replace behaviors that lead to undesirable results.

Ask how they and their child could improve their observation skills to better recognize and act on the early signs.

Use charts 2–5 as well as the one the parents filled out for their own child to direct discussion.

Between now and our next session, try to break down your child's asthma attacks into component parts. Next time we'll talk more about appropriate and inappropriate ways of responding to an attack.

problem-solving flow chart

Now we'll look at another type of flow chart that is helpful in problem solving.

The problem-solving flow chart can be used in conjunction with the discussion of the antecedent conditions checklist.

It is a useful activity if the discussion lags or if the group needs help focusing on problem-solving aspects.

It also provides some suggestions for solutions you, the teacher, can offer.

Hand out flow chart 7.

The problem-solving flow chart is similar to the other ones we have used in that it requires you to analyze behavior and, when appropriate, consider how the component parts might be changed. Another familiar feature is that the chart requires you to continue to view behaviors as occurring in a sequence. What is different is that it asks you to make decisions at key points along the way. You must consider the questions asked and decide how best to proceed. Thus, use of such flow charts will teach you to make decisions in solving problems common to childhood asthma.

examples: attack prevention

Hand out charts 8, 9, and 10.

avoiding known triggers

These charts (numbers 8, 9, and 10) are concerned with ways to prevent attacks from occurring. Number 8 depicts prevention by having the youngster avoid known precipitants of his asthma. The reader should first answer the question in the box on the top left hand side of the chart. If the answer is yes, then the child should be reinforced, usually through praise, for responding in a manner calculated to avoid attacks. If the answer is no, the next step is to conduct a behavioral analysis to determine why the youngster does not avoid known precipitants. The best way to conduct such an analysis is to observe the child's behavior. Perhaps such an analysis will reveal that the youngster is unnecessarily exposing himself to stimuli known to provoke his attacks. As an example, a child allergic to animal dander may still play with dogs and cats. This behavior, in turn, may trigger attacks. Once the child or parents have conducted a behavioral analysis, they may want to change the behavior. In our example, this may entail finding another home for a family pet or teaching the child to avoid contact with animals as much as possible. The former action is never easy for any child or his parents. However, the gains that can be realized by ridding the home of a pet, that is, reduced asthma attacks, must be weighed against the costs of keeping the pet, or, more asthma attacks. I do not want to convey the impression this is an easy decision to make; it is not. However, the basic question still remains: What is more important—the health of the child or a pet in the home?

If a behavior analysis has revealed certain behaviors that might be changed and if a procedure is followed for changing these behaviors, the next question is whether or not the child now attempts to avoid precipitants of asthma and prevents attacks. If the answer is yes, then the child (and his family) should be reinforced (or they should reinforce themselves) for taking appropriate action. If the answer is no, then additional training procedures should be instituted. Perhaps these can take the form of teaching the child to be more consistent in instructing himself to avoid contact with stimuli apt to trigger his attacks. Again, the child's progress should be monitored. If changes do occur, then the child should be reinforced for his appropriate action; if changes are not forthcoming, then the child or his parents may wish to seek other assistance, for example, suggestions from the youngster's physician for possible action they may initiate.

compliance with medical instructions

Number 9 is concerned with compliance with medication instructions.

Ask if this is a problem for group participants for directing class discussion.

Studies have shown only a small percentage of these youngsters generally comply with their physician's medication instructions. If your child is one of the minority who do comply, he/she should be consistently reinforced for making a major contribution to the control of the disorder; if he/she is in the majority, however, a behavioral analysis and change procedure should be considered.

The following information is offered as a suggestion for directing class discussion.

There are a number of reasonable factors why children do not comply with instructions. These range from side effects of the medications to cost of the preparations. How can you analyze the behavior? What are your child's reasons?

Allow class participants to offer answers to questions.

A detailed analysis of the youngster's behavior should reveal why he does not comply with medication instructions. A change procedure may then be introduced. What can you do to institute a program to change the behavior?

Permit class discussion.

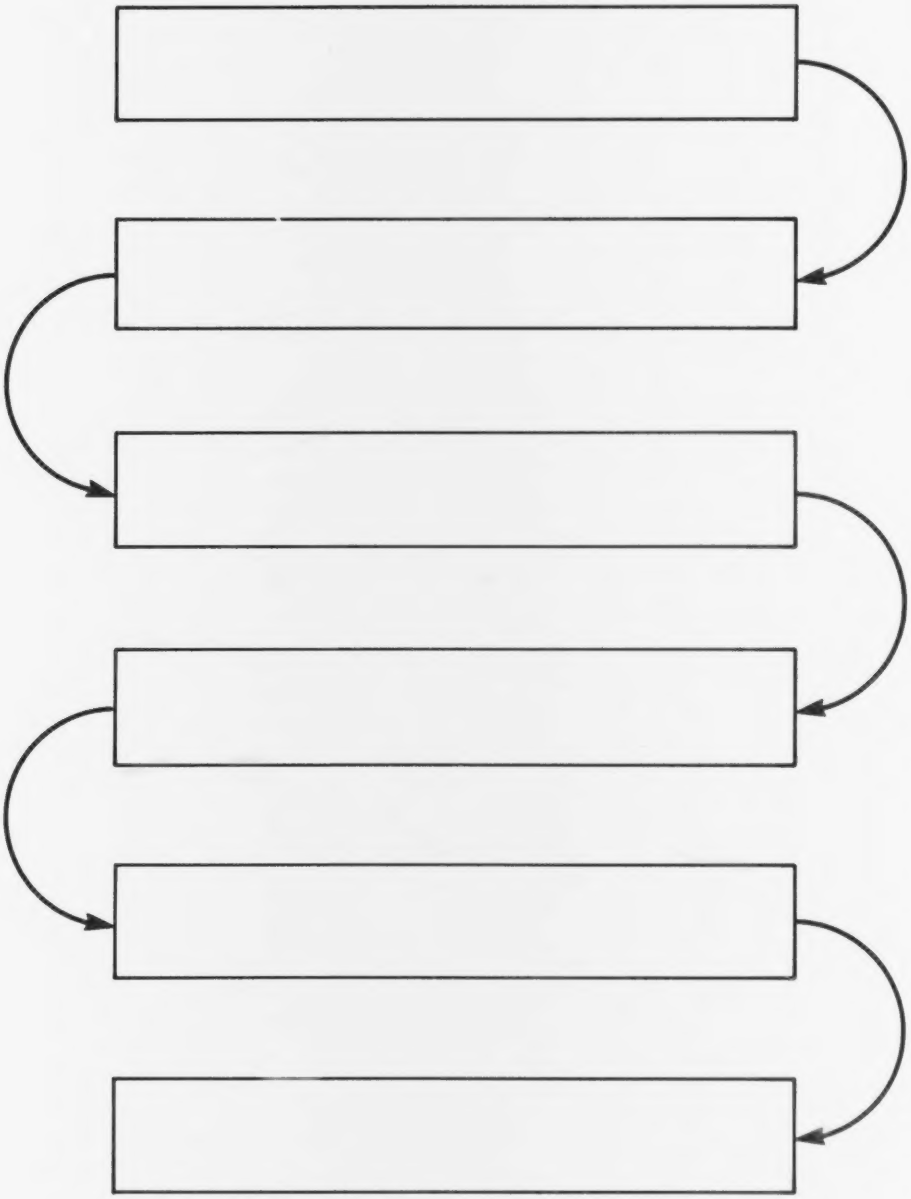
There are a number of options that can be taken to changing noncompliant behavior, ranging from the acquisition of an inexpensive pill container with the amount to be taken daily, to the parent and child working out some sort of arrangement where parents gradually pass control of the medicine from themselves to their youngster. Or, parents and their youngster may wish to visit with their physician to determine if compliance can be improved by prescribing less expensive medicines, by taking medications on a schedule more convenient to the child and his parents, or by consuming the drugs with a more palatable substance, for example, with a fruit drink. A number of strategies can be generated, possibly in concert with a youngster's physician, for improving medication compliance. If, however, the designed procedure fails to effect change, then parents and their child may wish to pursue other approaches, including the prescribing of different medications, to improve compliance.

physical changes as early signs

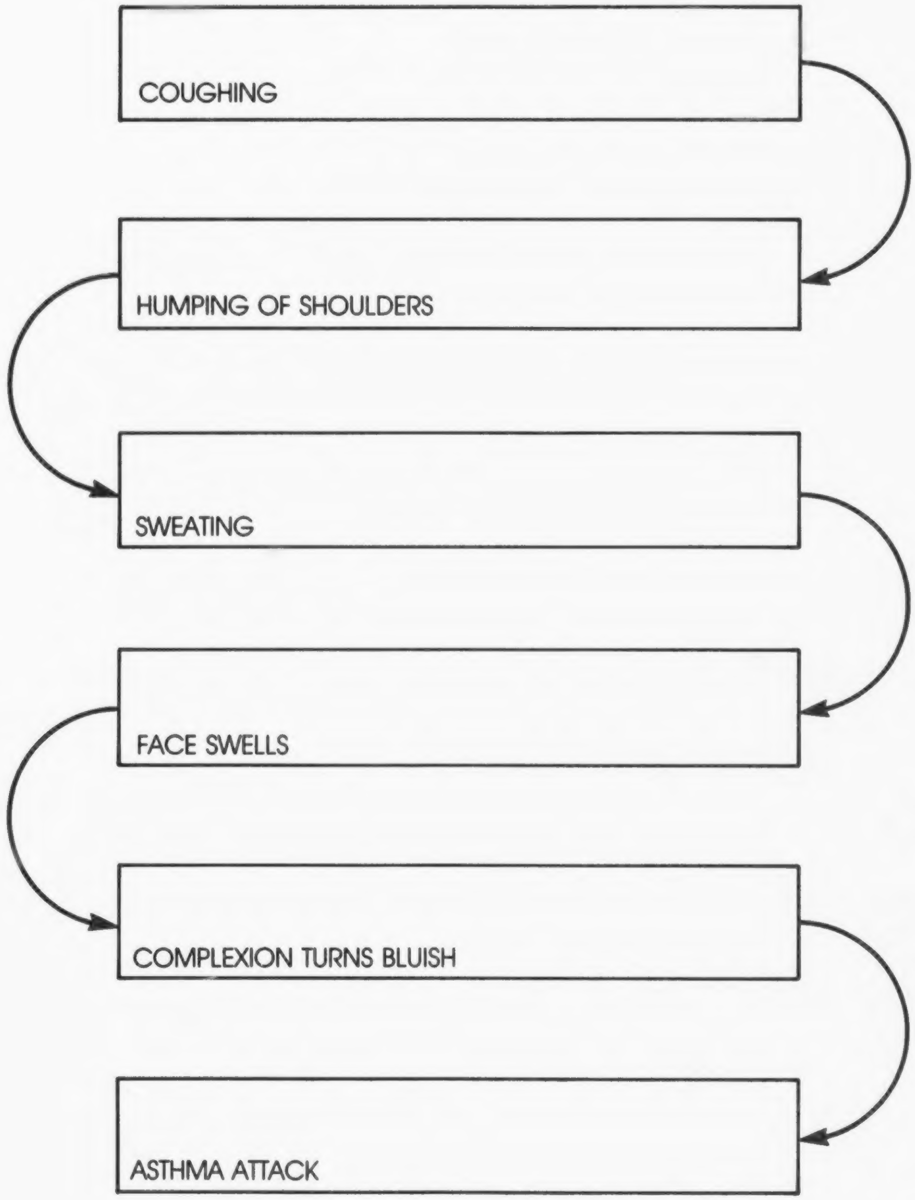
Let's move on to number 10. This chart is concerned with whether or not physical changes are noted in an asthmatic child just prior to his attacks. If you have been a careful and accurate observer, you may have noticed such changes in your child. If so, you can initiate treatment, similar to what we discussed earlier, to alleviate symptoms before a full-blown attack occurs. If you do not recognize any changes, you may begin by carefully observing your child and jotting down your observations on the first type of form we used. This will provide you with information about what behaviors, linked together, regularly occur before a full-blown asthma attack. If you take this action, you should be able to answer yes to the next question; without such action, you will need to conduct further behavioral analysis of the asthmatic child.

Next week we'll use the problem-solving and comparison types of flow charts to discuss managing attacks and concurrent conditions.

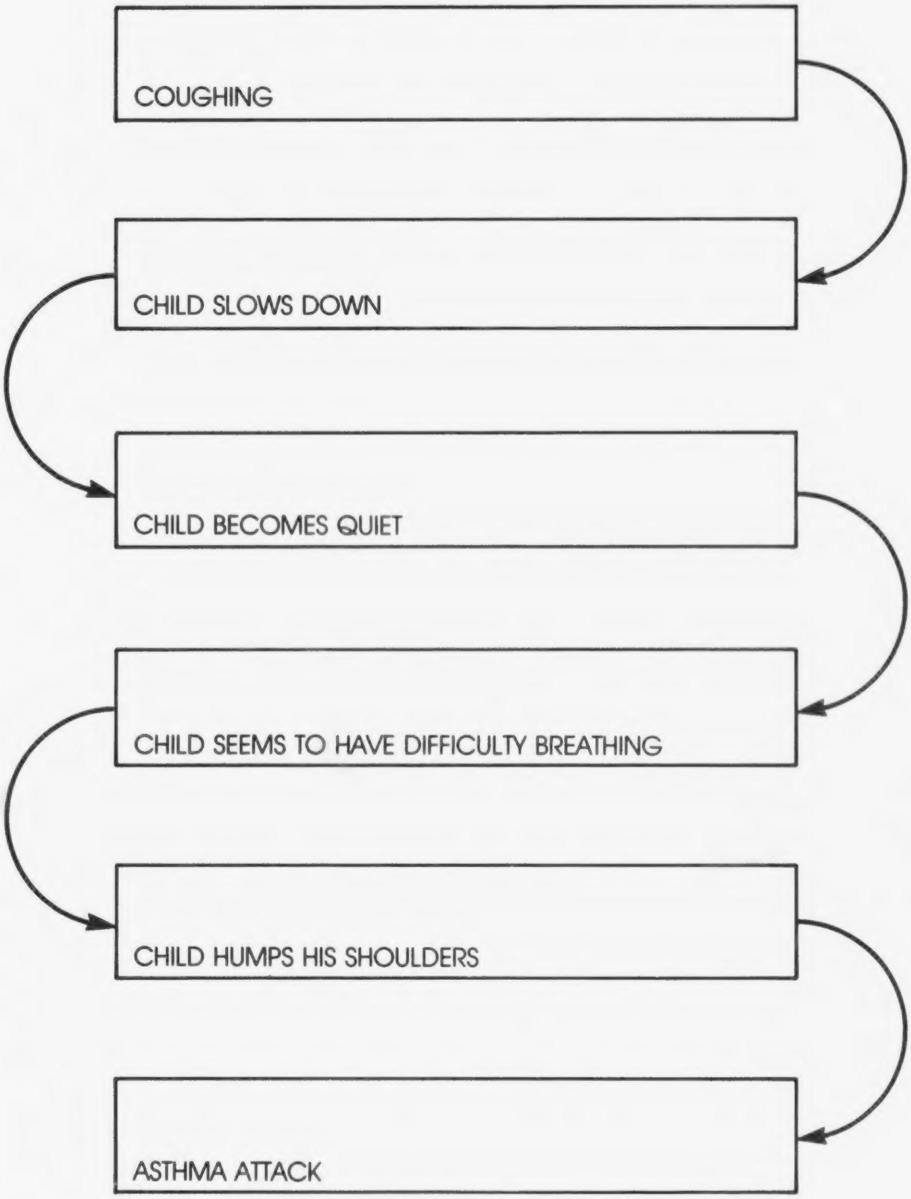
FLOW CHART 1. EXAMPLE OF BEHAVIORAL CHAIN



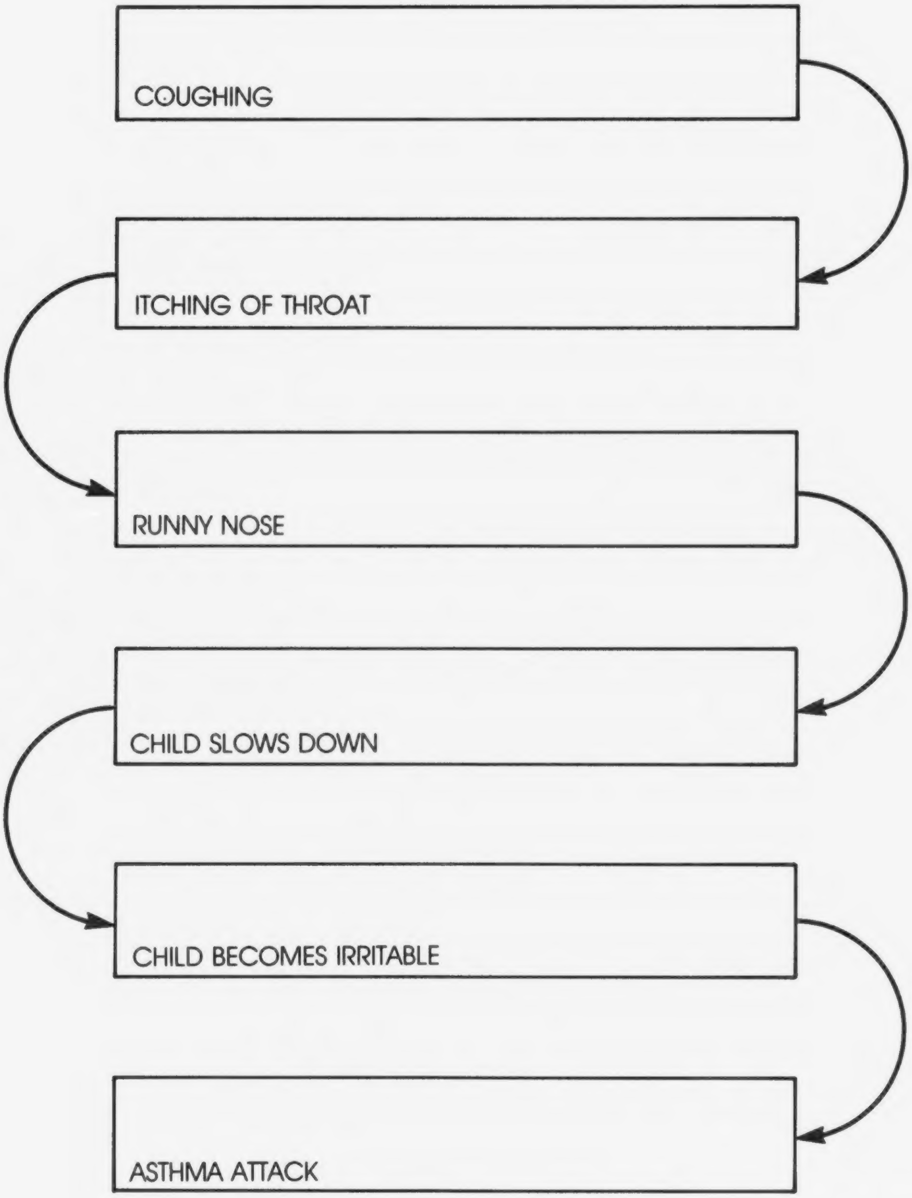
FLOW CHART 2. EVENTS OCCURRING BEFORE ASTHMA ATTACK WITH ONE CHILD


COUGHING
HUMPING OF SHOULDERS
SWEATING
FACE SWELLS
COMPLEXION TURNS BLUISH
ASTHMA ATTACK

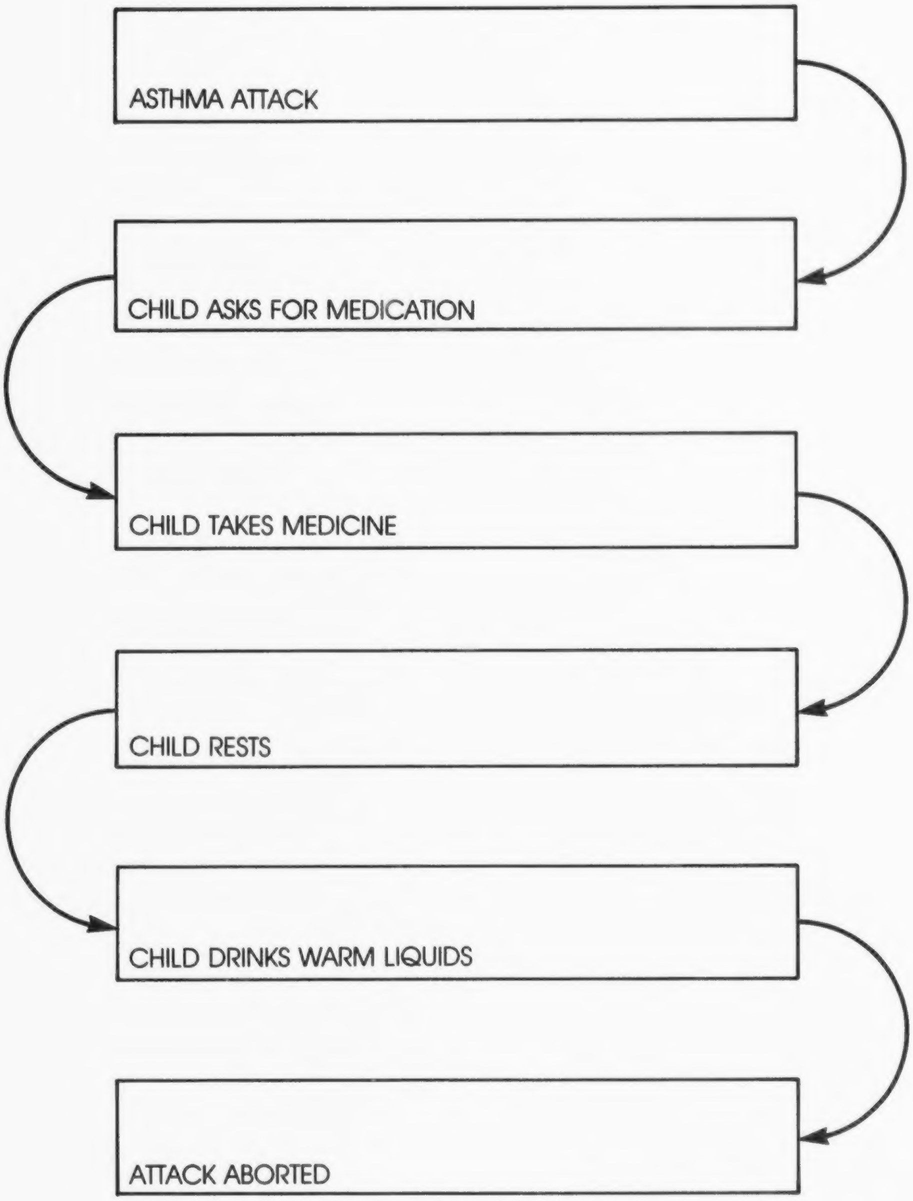
FLOW CHART 3. EVENTS OCCURRING PRIOR TO AN ATTACK IN A SECOND CHILD


COUGHING
CHILD SLOWS DOWN
CHILD BECOMES QUIET
CHILD SEEMS TO HAVE DIFFICULTY BREATHING
CHILD HUMPS HIS SHOULDERS
ASTHMA ATTACK

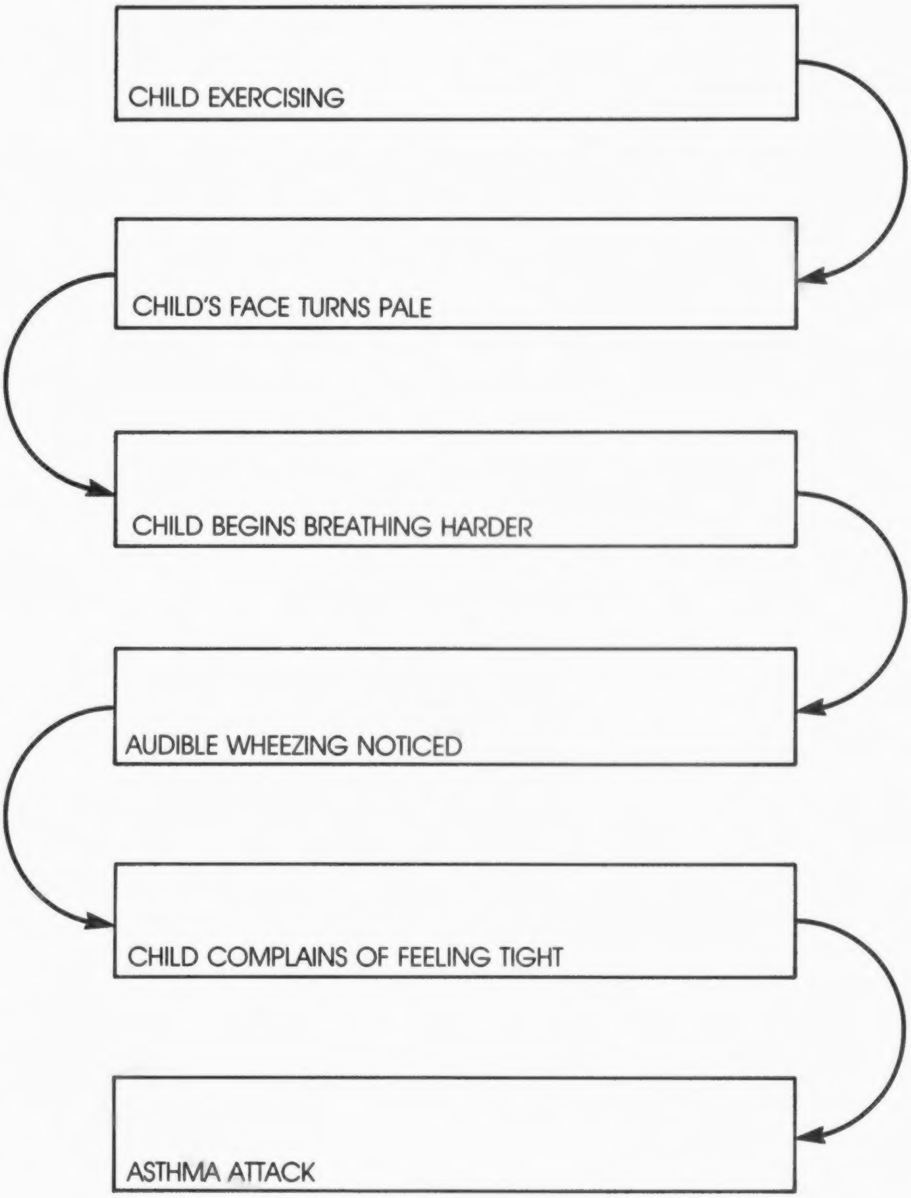
FLOW CHART 4. EVENTS OCCURRING PRIOR TO AN ATTACK IN A THIRD CHILD


COUGHING
ITCHING OF THROAT
RUNNY NOSE
CHILD SLOWS DOWN
CHILD BECOMES IRRITABLE
ASTHMA ATTACK

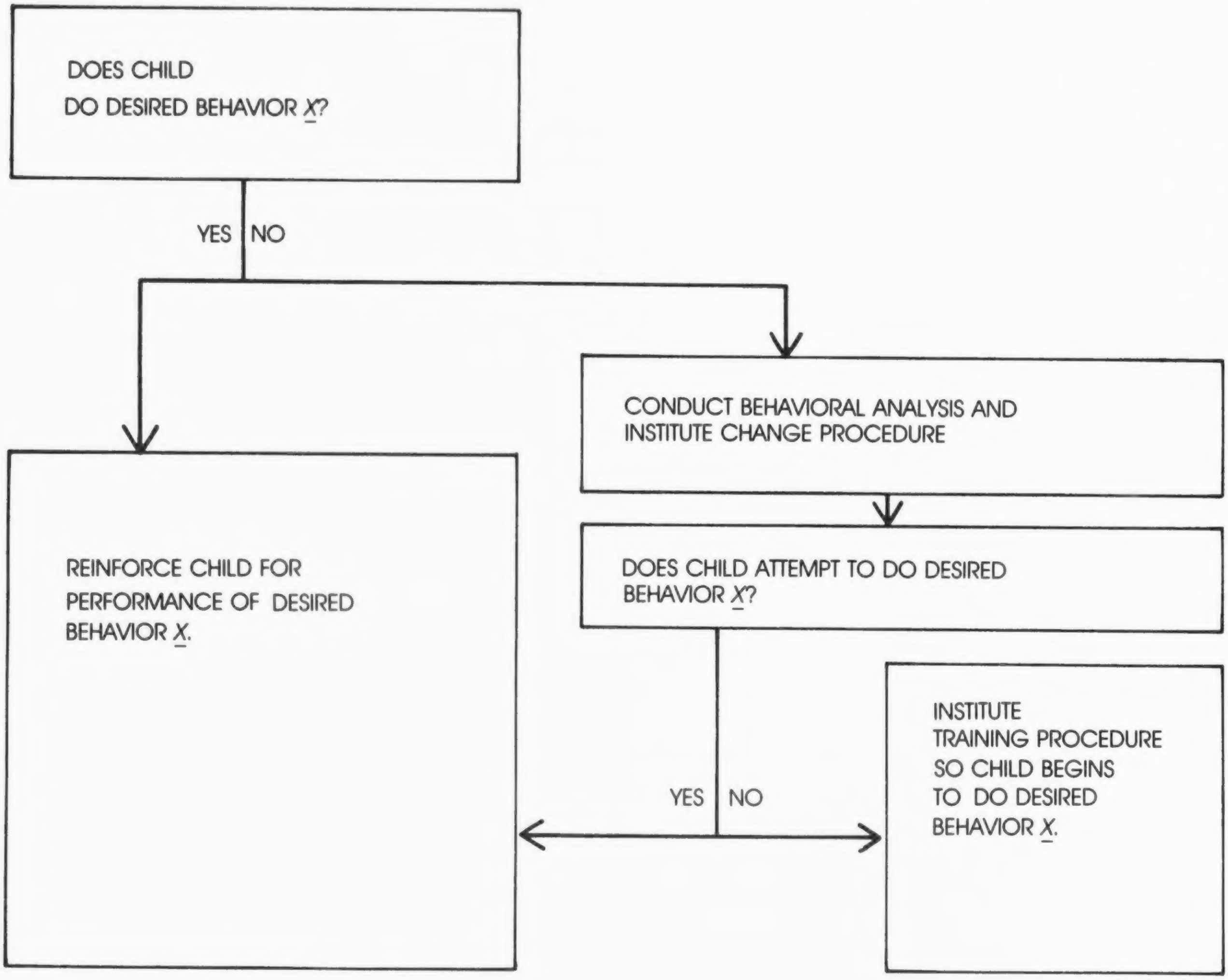
FLOW CHART 5. EVENTS OCCURRING PRIOR TO AN ATTACK IN A FOURTH CHILD


ASTHMA ATTACK
CHILD ASKS FOR MEDICATION
CHILD TAKES MEDICINE
CHILD RESTS
CHILD DRINKS WARM LIQUIDS
ATTACK ABORTED

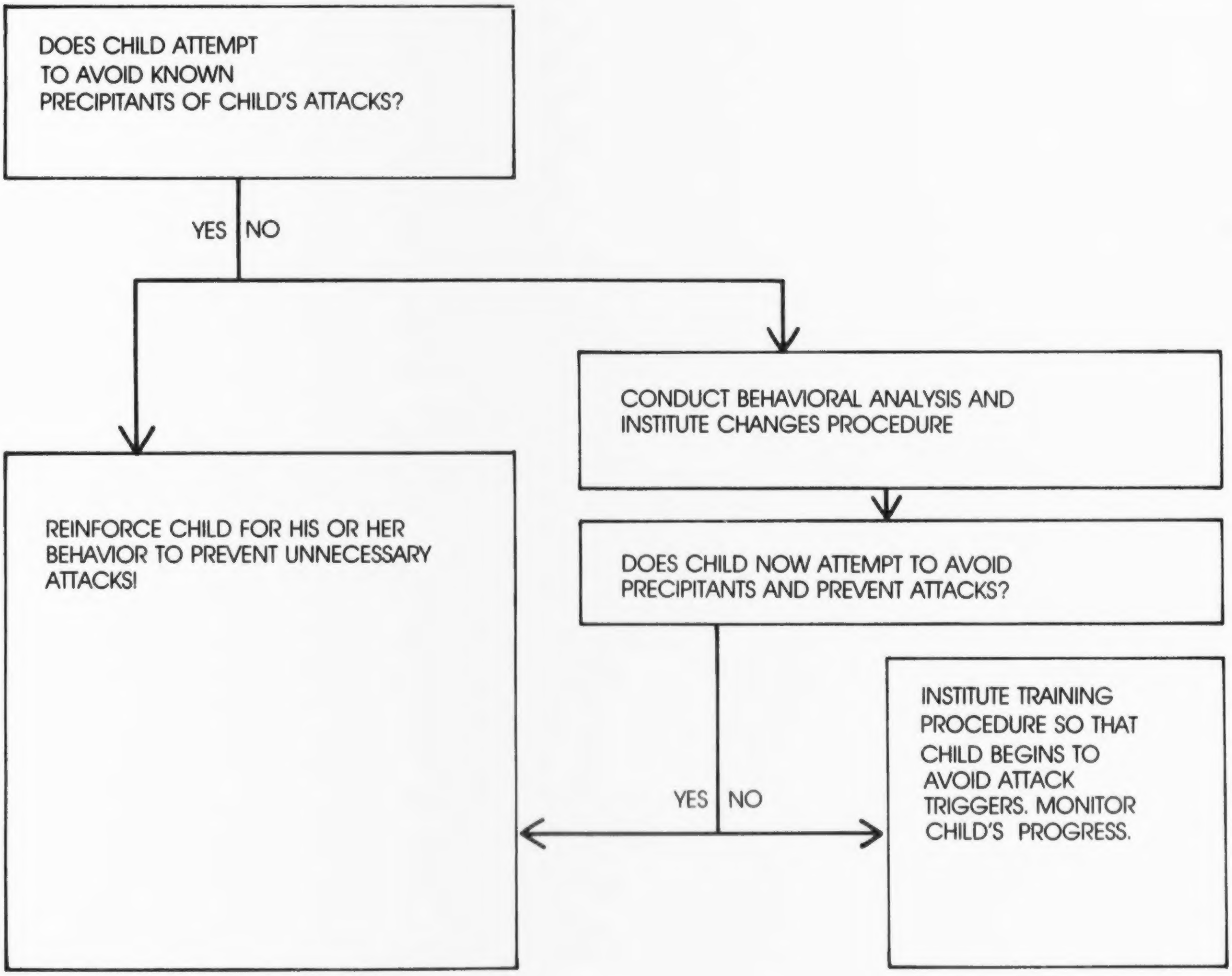
FLOW CHART 6. SEQUENCE OF EVENTS OCCURRING PRIOR TO AN EXERCISE-INDUCED ATTACK IN CHILD


CHILD EXERCISING
CHILD'S FACE TURNS PALE
CHILD BEGINS BREATHING HARDER
AUDIBLE WHEEZING NOTICED
CHILD COMPLAINS OF FEELING TIGHT
ASTHMA ATTACK

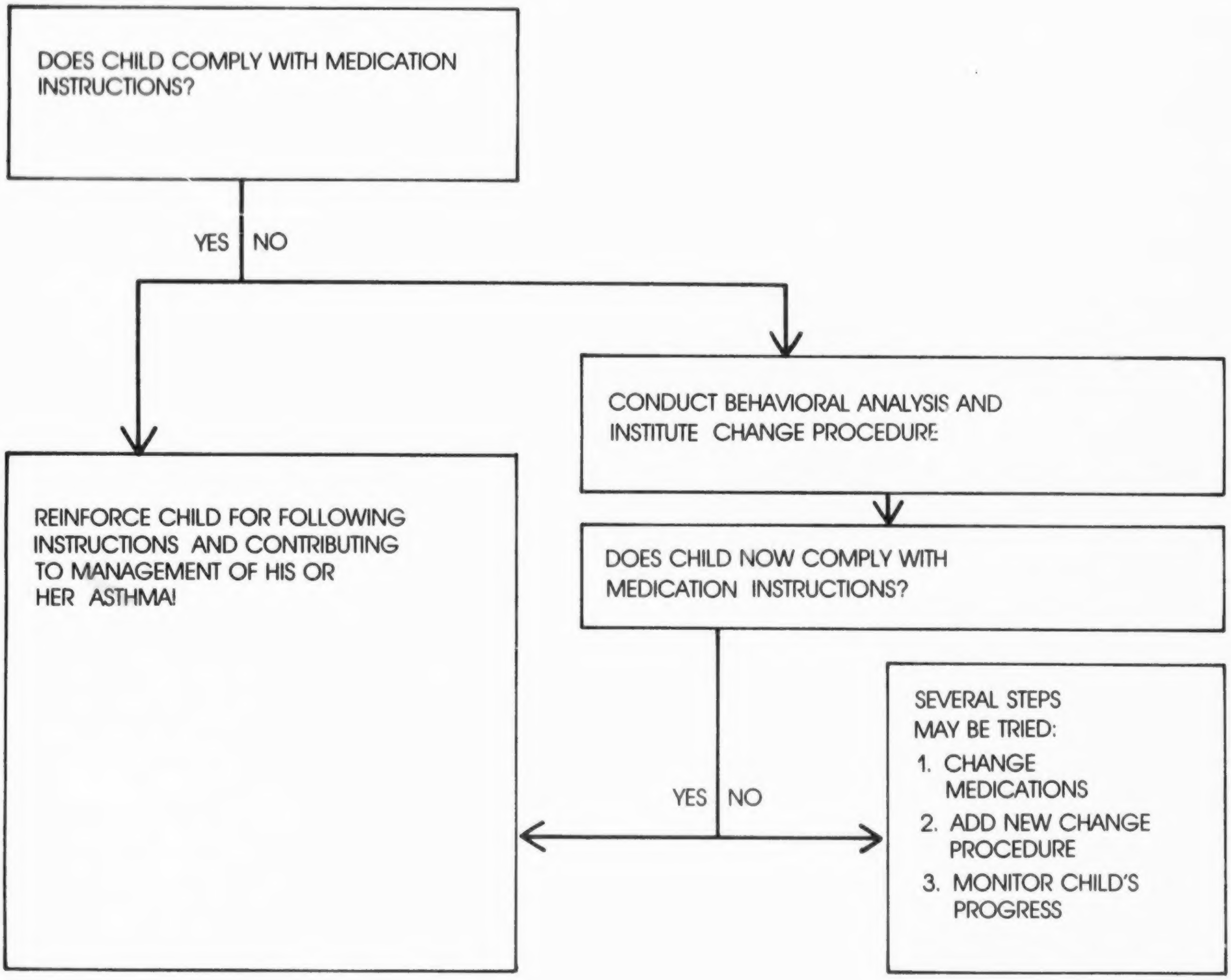
FLOW CHART 7. PROBLEM SOLVING CHART


DOES CHILD DO DESIRED BEHAVIOR X?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR PERFORMANCE OF DESIRED BEHAVIOR X.
DOES CHILD ATTEMPT TO DO DESIRED BEHAVIOR X?
YES
NO
INSTITUTE TRAINING PROCEDURE SO CHILD BEGINS TO DO DESIRED BEHAVIOR X.

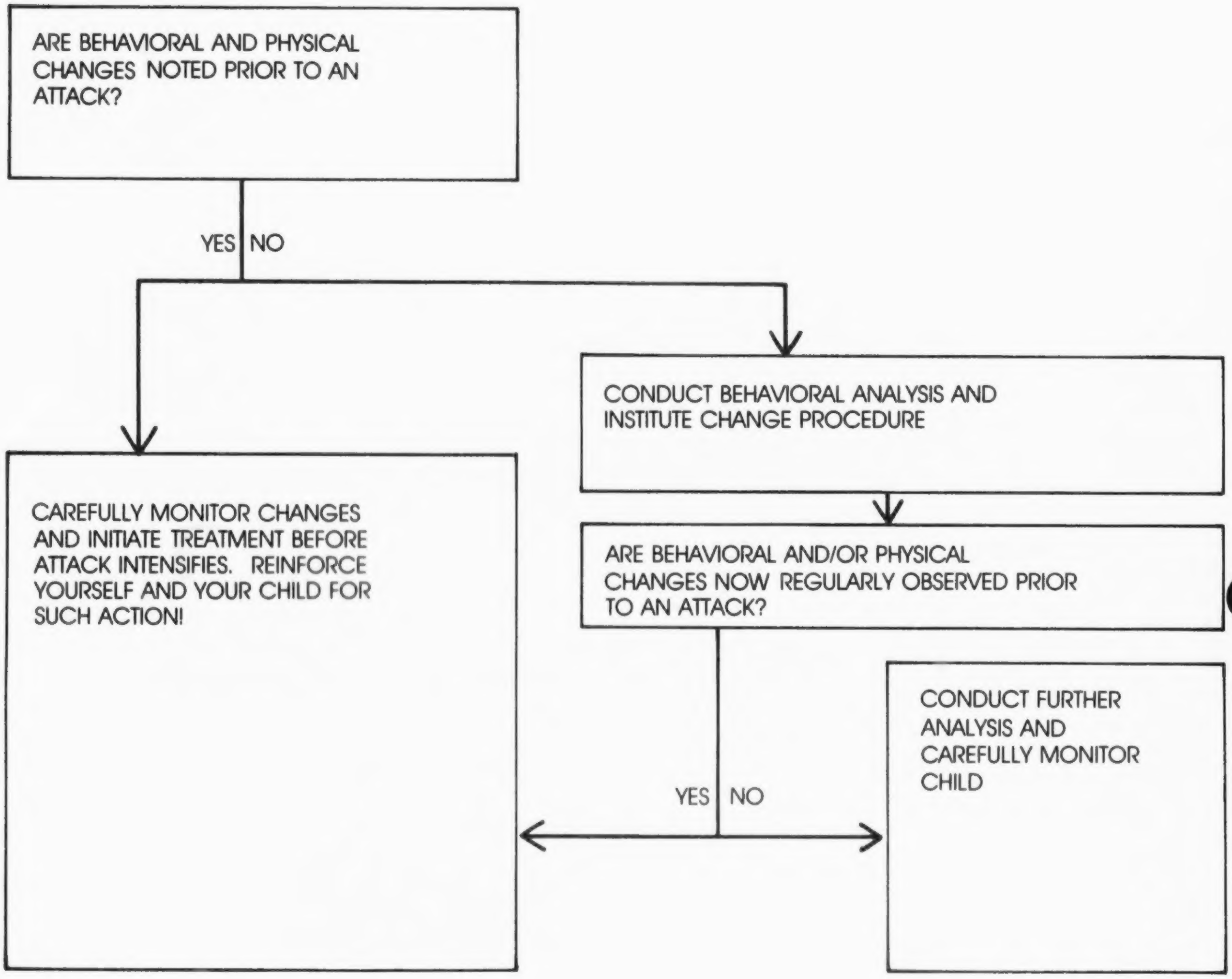
FLOW CHART 8. PREVENTING ATTACKS: AVOIDING PRECIPITANTS


DOES CHILD ATTEMPT TO AVOID KNOWN PRECIPITANTS OF CHILD'S ATTACKS?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGES PROCEDURE
REINFORCE CHILD FOR HIS OR HER BEHAVIOR TO PREVENT UNNECESSARY ATTACKS!
DOES CHILD NOW ATTEMPT TO AVOID PRECIPITANTS AND PREVENT ATTACKS?
INSTITUTE TRAINING PROCEDURE SO THAT CHILD BEGINS TO AVOID ATTACK TRIGGERS. MONITOR CHILD'S PROGRESS.
YES
NO

FLOW CHART 9. PREVENTING ATTACKS: COMPLYING WITH MEDICATION INSTRUCTIONS


DOES CHILD COMPLY WITH MEDICATION INSTRUCTIONS?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR FOLLOWING INSTRUCTIONS AND CONTRIBUTING TO MANAGEMENT OF HIS OR HER ASTHMA!
DOES CHILD NOW COMPLY WITH MEDICATION INSTRUCTIONS?
YES
NO
SEVERAL STEPS MAY BE TRIED:
1. CHANGE MEDICATIONS
2. ADD NEW CHANGE PROCEDURE
3. MONITOR CHILD'S PROGRESS

FLOW CHART 10. MANAGING ATTACKS: RECOGNIZING EARLY WARNING SIGNS


ARE BEHAVIORAL AND PHYSICAL CHANGES NOTED PRIOR TO AN ATTACK?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
CAREFULLY MONITOR CHANGES AND INITIATE TREATMENT BEFORE ATTACK INTENSIFIES. REINFORCE YOURSELF AND YOUR CHILD FOR SUCH ACTION!
ARE BEHAVIORAL AND/OR PHYSICAL CHANGES NOW REGULARLY OBSERVED PRIOR TO AN ATTACK?
YES
NO
CONDUCT FURTHER ANALYSIS AND CAREFULLY MONITOR CHILD

LEADING RELAXATION EXERCISES

The relaxing procedures given here are an abbreviated version of Jacobsen's deep muscle relaxation exercises that were developed in the 1930's.[1] These exercises are based on the idea that by tensing and then releasing various muscles, these muscles and the whole body come to a state of deep relaxation. By practicing these exercises, a person can learn to relax quickly, eventually dispensing with the tightening and tensing part of the exercise. To get to this advanced stage does take faithful practice, usually with professional help. But anyone who understands the general principles can use the exercises themselves to learn to relax.

Setting

You should have a quiet, dimly lit place to lead the exercises. Each class participant needs a reclining chair or pad for the floor. It is important that all parts of the body be supported while practicing. The setting should lessen distractions and promote concentration on the relaxing. You will need a stopwatch or clock with a second hand to time the tensing and relaxing periods.

Guidelines

Each practice session may last up to 30 minutes; most will be shorter than that. Because participants' eyes are closed for the exercises, have class members remove contact lenses or glasses before beginning. Gum should be discarded. There is no talking during the session except for the instructions. If an instruction must be repeated, arrange ahead of time for a signal. Raising the index finger is a common signal that is used for this purpose during relaxation.

Show the class generally how to do the tensing and releasing that are central to the exercises. Then have the class lie back and follow your instructions with their eyes closed. The instructions are usually delivered in a monotone.

Commercial taped versions of these exercises are available from publishers of psychological works. Tell class members that doing these exercises is easier if they use a tape or follow instructions from another person.

basic instructions to the class group

Basic Instructions To The Group

What follows is a sample of what the tensing/relaxing instructions will sound like as you listen to me guide you through the exercises. The general instructions and muscle groups are fairly standard. If a particular tensing exercise does not seem to be right for you, try to discover another way to tense that particular muscle or muscle group and substitute your own exercise. Experiment with finding a substitute at some time other than during our practice sessions. Try to concentrate and ignore any distractions.

When you are instructed to "tense" a certain muscle, you should tighten and tense it, but stop short of cramping it. You are to *hold the tightness* for approximately 5 *to 7 seconds* for each muscle. When you let go of the tightness, do it all at once, quickly. Then stay in that *relaxed state for approximately 30 to 40 seconds.* Concentrate on how good it feels in that relaxed state. While relaxing, many people experience a heavy, warm feeling. Just let yourself sink into the comfortable, relaxed state and savor it. An important part of the exercises is to become conscious of how your body feels when it is tense, and in contrast, how it feels when it is relaxed.

---

[1] Jacobsen, E. *Progressive Relaxation.* Chicago: University of Chicago, 1938.

In the beginning, it helps many people to practice tensing and relaxing each muscle twice: tense and then relax the muscles of the hand, then repeat the tensing and relaxing of the hand muscles again. Then move on to the arm muscles. After you have practiced several times and find that you can relax your muscles well, you can dispense with doing the tensing twice. Later you can also start to group muscles into larger units, such as tensing your hand and arm muscles at the same time.

Outside of class you should practice at least two times each day. Many people find it easiest to practice at set times each day.

Some people create a calm, peaceful scene or image in their mind to help them relax. Feel free to imagine and visualize any image that helps you become comfortable. Some common words and images about relaxation are floating in space, sinking or floating down through layers of relaxation, warmth, heaviness, soothing, loose, spreading relaxation, limp, etc. Any image or word that helps you relax can be used. Substitute your own word for any word in these exercises that you do not like or makes you uncomfortable.

muscle groupings sequence

The muscles of the body are tensed and relaxed in the following sequence:

1. Hands, lower arms;
2. Upper arms, shoulders;
3. Scalp, forehead, eyes;
4. Eyes, nose, mid facial muscles;
5. Lower facial muscles, jaw, mouth;
6. Neck;
7. Chest, shoulders, upper back;
8. Lower back, stomach;
9. Buttocks, hips;
10. Thighs;
11. Lower leg, calf; and
12. Feet.

leading the exercises

Let's begin relaxation practice. First, make yourself as comfortable as possible. Be sure that your weight is fully supported and you are as comfortable as possible. Move around a little to be sure you have found the most comfortable position for your body.

Now close your eyes and relax. Take a deep breath and let it out slowly, feeling yourself release tension as you let out your breath. Just let yourself relax as much as possible, breathing in and out in a comfortable, relaxing way. Before we begin the tensing and releasing exercises, remember to pay attention to the muscles as I name them and also to the way it feels when you tense them, then the way it feels when they are relaxed.

Now we will begin. With both of your hands make a tight fist and squeeze hard. Keep squeezing and hold it tightly for 5 to 7 seconds. Feel the tension in your hands and lower arms.

▌Use stopwatch or clock for 5–7 seconds.

Okay, now relax, let go all at once quickly. Let the tension flow out the tips of your fingers. Notice the difference in the way your hands and lower arms feel now. You may feel warmth spreading through your hands and arms. Take time to feel how good it is to have your hands so relaxed. Stay relaxed for a total of 30 to 40 seconds.

As mentioned before, the first few times you practice, it is helpful to do the tensing and relaxing sequence twice with each muscle group. So repeat the tightening and relaxing of your right hand and lower arm now. For the rest of the exercise, I will remind you to repeat each sequence.

We will move to your upper arm muscles. To tense these, push your elbows down against the chair or floor. Push them now and hold it. Hold it and feel the tension throughout your upper arms and shoulders for 5 to 7 seconds.

▌Use stopwatch or clock for 5–7 seconds.

Now relax, relax your arms completely. Feel your relaxation spreading throughout your upper arms and shoulders. Just concentrate on the nice feeling of being relaxed. It is important to pay attention to the feeling of relaxation so you learn the difference between the feelings of tension and relaxation.

▌Let 30–40 seconds elapse.

Again, tense and relax your upper arms, following the same time sequence as before. An alternate way of tensing your upper arms is to press your elbows down and at the same time pull your elbows in toward your body. Use whichever method works best for you.

We will move to the muscles around your face and neck next. While you are tensing and relaxing these muscles, try to let your arm and hand muscles stay relaxed.

To tense your face muscles, lift your eyebrows as high as possible and keep them there. Do this now, and feel the tension around your eyes and forehead. Good.

▌Let 5–7 seconds elapse.

Now let it go. Relax and feel your scalp smoothing out as the tension is released. Focus on the calm feeling of being relaxed and comfortable. Some people feel a tingling after doing this exercise. Just relax and enjoy this feeling of relaxation.

▌Let 30–40 seconds elapse.

Tense and relax eyebrows again.

Now we will move down your face to your nose and cheeks. To tense this area, squint your eyes and wrinkle your nose at the same time. Do this now and hold it tightly. Feel the tension across your nose and around your nose.

▌Let 5–7 seconds elapse.

And relax all at once. Feel the tension flow out of your face, across your cheeks and away. A wave of relaxation flows over your face. Just enjoy that feeling.

▌Let 30–40 seconds elapse.

▌Repeat exercise for face and nose.

Now we will move to your lower face and jaw. To tense this area, bite your teeth together hard, holding your teeth together and pulling the corners of your mouth back. Do this now and feel the tightness in your facial muscles. Hold it for 5 to 7 seconds.

▌Let 5–7 seconds elapse.

Now relax. Let go of that tightness all at once. Your jaw will hang loose and relaxed. Your mouth may be open slightly. Attend to the feeling of having your face relaxed. How good it feels!

▌**Let 30–40 seconds elapse.**

▌**Repeat exercise.**

Next we will move to your neck muscles. To tense the muscles in your neck, pull your chin toward your chest, but keep it from touching your chest. Feel the tension in the front and back of your neck as you strain. Hold it tight for 5 to 7 seconds.

▌**Let 5–7 seconds elapse.**

Now let it all go. Let your head fall back naturally, without any tension. Just relax and attend to the feeling. You may feel waves of relaxation sweeping over you.

▌**Let 30–40 seconds elapse.**

▌**Repeat exercise.**

Let's review the muscle groups that we have covered so far. As I name the muscles, focus your attention upon them. If you feel any tension in that muscle, try to let that tension go as I name the muscle. If you have a lot of tension, then do the tensing and relaxing exercise for that muscle. I will wait until you are done before moving on to the next muscle group.

Focus on your hands. They may feel warm and heavy. As you breathe in and out, see if you can let any more tension out of your hands.

▌**Let 10–25 seconds elapse.**

Move up to your lower arm muscles.

▌**Let 10–25 seconds elapse.**

Now, upper arm muscles.

▌**Let 10–25 seconds elapse.**

Become aware of how comfortable and relaxed your hands and arms are. Completely relaxed and comfortable. Enjoy how good it feels. Now your face and neck muscles. If there is any tension, think of letting it drain out of your face, down your forehead, over your cheeks, through your neck, down your arms, and out the ends of your fingertips. You should feel warm and relaxed.

Next we will move on to the muscles of your chest and stomach. To tense the muscles of your chest, shoulders, and upper back, pull your shoulder blades together. Think of making them touch. Do this now and pull them tightly together. Hold the tension and feel it.

▌**Let 5–7 seconds elapse.**

Now let it all go. Let your shoulders slump into a comfortable position. Allow your upper trunk to feel completely relaxed. Become aware of how slowly and calmly you are breathing. Just relax.

▌**Let 30–40 seconds elapse.**

▌**Repeat exercise.**

Next we will work on your stomach muscles. To tense the stomach muscles, suck your stomach muscles in as if you were trying to have your stomach muscles touch your back, as if someone was about to hit you hard in the stomach and take your breath away. Hold it. Concentrate on how knotted up those muscles feel.

Let 5–7 seconds elapse.

Now relax, let your stomach hang free. Just relax and let a little more tension go with each breath that you breathe out. Feel your stomach uncoil. Just enjoy the feelings of the muscles as they loosen up, smooth out, and relax more and more.

Let 30–40 seconds elapse.

Repeat exercise.

You are probably feeling deeply relaxed from the waist up now.

Next let's move to the muscles around your buttocks and hips. To tense the muscles in this area, squeeze your buttocks together hard and hold it. Do it now and study the tension that is created.

Let 5–7 seconds elapse.

Now relax. Just take a few seconds to feel your muscles spread out. Sink into the feelings of being really relaxed.

Let 30–40 seconds elapse.

Repeat exercise.

Moving down to the muscles in your thighs, tense these muscles by tightening them. Feel how hard your thighs become.

Let 5–7 seconds elapse.

An alternate method of tensing here is to lift the legs very slightly to create tension in the thighs.

And relax. Let all the tension go from your thighs. Feel those muscles smooth out as waves of relaxation come over you. Settle into the comfortable feeling of being relaxed.

Let 30–40 seconds elapse.

Repeat exercise.

Okay, now tense your calf muscles by bending your toes back and stretching your legs out in front of you. Bring your toes back as if you're trying to touch them to your kneecaps. Hold that tension.

Let 5–7 seconds elapse.

And now relax. Your legs will flop back on the chair or floor. Feel how heavy your legs feel. They are comfortable and relaxed. Pay attention to how you feel now. Comfortable . . . calm and relaxed. Just enjoy those feelings.

Let 30–40 seconds elapse.

Repeat exercise.

The next and last parts to relax are your feet. To first tense the muscles in your feet, point your toes hard toward you. Now point them as hard as you can away from you and hold that tension.

▌Hold no longer than 5 seconds for feet.

And let it all go. Feel your feet grow warmer as the relaxation spreads over them. Enjoy that feeling of the muscles smoothing out. Relax and attend to the feeling.

▌Let 30–40 seconds elapse.

▌Repeat exercise.

Now let's review the muscle groups from your neck down. As I name them, concentrate on that muscle group and see whether there is any tension there. As I say them, try to let yourself relax the muscles even more. If there is tension in a muscle that I name, do the tension and releasing exercise for that muscle. I will wait until you are ready to go on. With each breath, enjoy a deeper state of relaxation.

All right, now concentrate on your upper chest. If there is any tension there, let it go. Let it flow from your body.

▌Let 10–25 seconds elapse.

Next think about your stomach. Let any tension go from there. Feel how smooth and comfortable all the muscles in your trunk feel. Just enjoy.

▌Let 10–25 seconds elapse.

Last, your legs and feet. They should feel comfortable and relaxed. The muscles are all unwound and stretched out. Enjoy relaxation and see if you can breathe out a little more tension with this next breath.

Continue relaxing for the next few minutes. Enjoy the warm feeling of being relaxed. Very relaxed and comfortable. I will be quiet for a few minutes then I will help you get ready to leave. Until then, just stay relaxed and comfortable.

▌Let 3–4 minutes elapse.

Okay. Now it's time to end the relaxation practice session. It is important to do this slowly. With your eyes still shut, listen to how to do this. In a moment I will count to four. On the count of 'one,' move your hands and arms around to wake them up. On the count of 'two,' move your feet and legs around. On the count of 'three,' move your head and neck. On 'four,' open your eyes. Then sit up and move around in your place. All right, I will begin counting now.

'One,' move your hands and arms.

▌Count 5 seconds.

'Two,' move your feet and legs.

▌Count 5 seconds.

'Three,' move your head and neck.

▌Count 5 seconds.

'Four,' open your eyes and then sit up. Move around, then stretch and stand up.

Post Relaxation Discussion

After relaxation, it is helpful to talk with the class about the experience. Many times people are surprised at the feelings they experienced. Generally, you want to help people talk about the feelings that they did experience.

How did you feel?

How was that?

Relaxation should be an enjoyable, extremely pleasurable experience. If you experienced any discomfort or anxiety, let's try to find ways to relieve the problem situations.

Were there any particular muscles that were hard to relax?

Talk together to find alternative methods for tensing these problem areas.

If you experienced any muscle cramps, hold those muscles for less than 5 seconds.

You should practice two separate times every day. This homework is important in learning how to relax quickly.

ANTECEDENT CONDITIONS CHECKLIST

Directions: Check (√) any area(s) that is (are) of concern to you or your child with asthma.

Medication Compliance

____ Child tries to get out of taking medications
____ Child usually takes meds late
____ Child wants to take more medicine than necessary
____ Child usually needs to be reminded to take meds
____ Medications not controlling asthma
____ Even though child not following medication instructions, asthma under control
____ Child tries to avoid taking meds in certain situations
____ Medications prescribed for middle of night usually not taken
____ Medication instructions not clear
____ Child embarrassed to take meds in front of friends
____ Child and/or parents believe meds not important
____ Family sometimes runs out of asthma meds
____ Child and/or parent concerned about medication side effects
____ Other problems with medication compliance________________________

Medical Instructions

____ Doctor's instructions difficult to understand
____ Doctor's instructions don't help child stay healthy
____ Doctor's instructions don't help relieve asthma attack
____ Doctor difficult to communicate with
____ Child and/or parents don't have confidence in doctor's instructions
____ Other____

Asthma Triggers

____ Child doesn't avoid his/her asthma triggers
____ Child tries to expose him/herself to his/her asthma triggers
____ Child doesn't know his/her asthma triggers
____ Child refuses to part with family pet
____ Friends and relatives smoke; seem not to believe that smoking is a real problem for someone with asthma
____ Child often has attack when emotional (examples: nervous, afraid, excited, frustrated, guilty, angry, worried)
____ Punishing child leads to asthma symptoms
____ Child often has attack when doing things like laughing hard, crying, sneezing, coughing, yelling, etc.
____ Child often has attack when exercising or playing hard
____ Child often has attack during night
____ Child often has attack when wind or weather changes occur

_____ Child often has attack when infections occur
_____ Child's triggers mainly determined by guesswork
_____ Attacks just happen no matter what
_____ Other ______________________________

Early Signs of Asthma

Mood changes:
_____ Aggressive
_____ Quiet
_____ Overactive
_____ Grouchy
_____ Tired
_____ Easily upset
_____ Other______________________________

Change in facial features:
_____ Red face
_____ Swollen face
_____ Dark circles under eyes
_____ Perspiration
_____ Pale face
_____ Flared nostrils
_____ Other______________________________

Verbal complaints:
_____ Fatigue
_____ Tight chest
_____ Neck feels funny
_____ Don't feel good
_____ Chest filling up
_____ Chest hurts
_____ Mouth dry
_____ Other______________________________

Breathing Changes:
_____ Coughing
_____ Taking deep breaths
_____ Breathing through the mouth
_____ Other______________________________

Other:
_____ Stroking throat
_____ Itchy chin
_____ Other______________________________

Signs As Asthma Worsens:

_____ Voice change
_____ Fast breathing
_____ Swollen face
_____ Shallow fast breathing
_____ Quickening pulse

_____Listless
_____Other____

Signs of Severe Asthma:

_____Breathing from the neck up
_____Raised shoulders
_____Indentation at hollow of the neck
_____Expression of fear
_____Perspiration
_____Flared nostrils
_____Hands over head
_____Blue lips and/or fingernails
_____Labored breathing

SEEK IMMEDIATE MEDICAL HELP IF YOU OBSERVE ANY OF THESE ITEMS.

DON'T BE SHY: **ASK QUESTIONS**

A well-informed patient can deal with his or her medical condition intelligently and independently. Don't be reluctant to ask your doctor or the office staff questions about medical procedures, treatments, anticipated benefits or side effects of medications, or financial matters. Before your appointment, write down questions you wish to ask. Bring the list with you on your next visit. If your doctor usually seems too rushed to answer questions, call the office ahead of time to request a longer appointment.

When asking your questions, be sure that you understand the answers. Ask the doctor to explain words or terms that you don't understand. Questions are not "dumb," they simply reflect lack of knowledge. Don't be reluctant to press the doctor for explanations. Most doctors want to help their patients understand all aspects of their illness and its management.

A doctor is providing a consumer service for which he or she is well paid. Part of that service is an obligation to educate and inform his or her patients. You should not be reluctant to question your doctor, just as you would not be reluctant to ask a service person, "What is wrong? What can be done to prevent this problem in the future?" The health and well-being of your child is at stake.

Frequently you can save both time and money by calling your doctor's office to ask questions. Some doctors have a specific time each day for answering telephone inquiries. Others return patients' calls as time permits between office visits. In some medical practices, nurse practitioners or physician assistants are available and trained to answer most questions. A phone call can sometimes prevent an unnecessary (and expensive) office visit.

If you feel your doctor is unable or unwilling to answer your questions, you have several other information resources. Community or hospital libraries have many books and pamphlets about asthma and its treatment. Libraries in colleges and universities will have more technical information. The local chapter of the American Lung Association can provide information about asthma and other lung diseases. Your pharmacist can answer all your questions about medications either at the time you have your prescriptions filled or by telephone.

If you feel your communication problem with your doctor is insurmountable, you may wish to consider changing doctors. The local medical society can provide you with a list of asthma specialists. You can also ask for referrals from other doctors or other members of your family. Friends and acquaintances may also have recommendations. Call prospective new doctors to try to determine if they are more willing to answer questions and deal with your concerns more sympathetically than your current doctor.

ENVIRONMENTAL ASTHMA TRIGGERS

Many substances or events can cause an asthma attack to begin. Certain things may be irritating to the lining of the respiratory tract or they may be true allergens. Usually, each person with asthma is aware of what triggers his or her attacks. Environmental control means avoiding or limiting exposure to triggers to prevent attacks or lessen their severity. Not all children with asthma react to all triggers; responses are very individualized. Listed below are the most commonly recognized environmental factors associated with asthma attacks:

- smoke from cigarettes, cigars, pipes
- dirty ashtrays
- dust
- aerosol sprays
- strong odors, such as paints or thinner
- a smoky fireplace
- flowers and pollen-producing plants
- cooking odors
- cleaning powders, fluids
- insecticides
- foods such as seafood, nuts, chocolate, cow's milk, cereals, corn, citrus fruits and tomatoes
- feather pillows, mattresses, comforters
- wool blankets
- stuffed animals
- upholstered chairs
- carpets
- wool, fur or linen clothing
- pets (animal dander)
- cosmetics, shaving cream, cologne
- steam from the shower

Asthma attacks can also be triggered by:

- stress
- strenuous exercise (Moderate exercise can be helpful to maintain good physical condition and to relieve tension. Ask the doctor to suggest a beneficial exercise program.)
- respiratory infections (Those with asthma should avoid being exposed to persons with respiratory infections.)

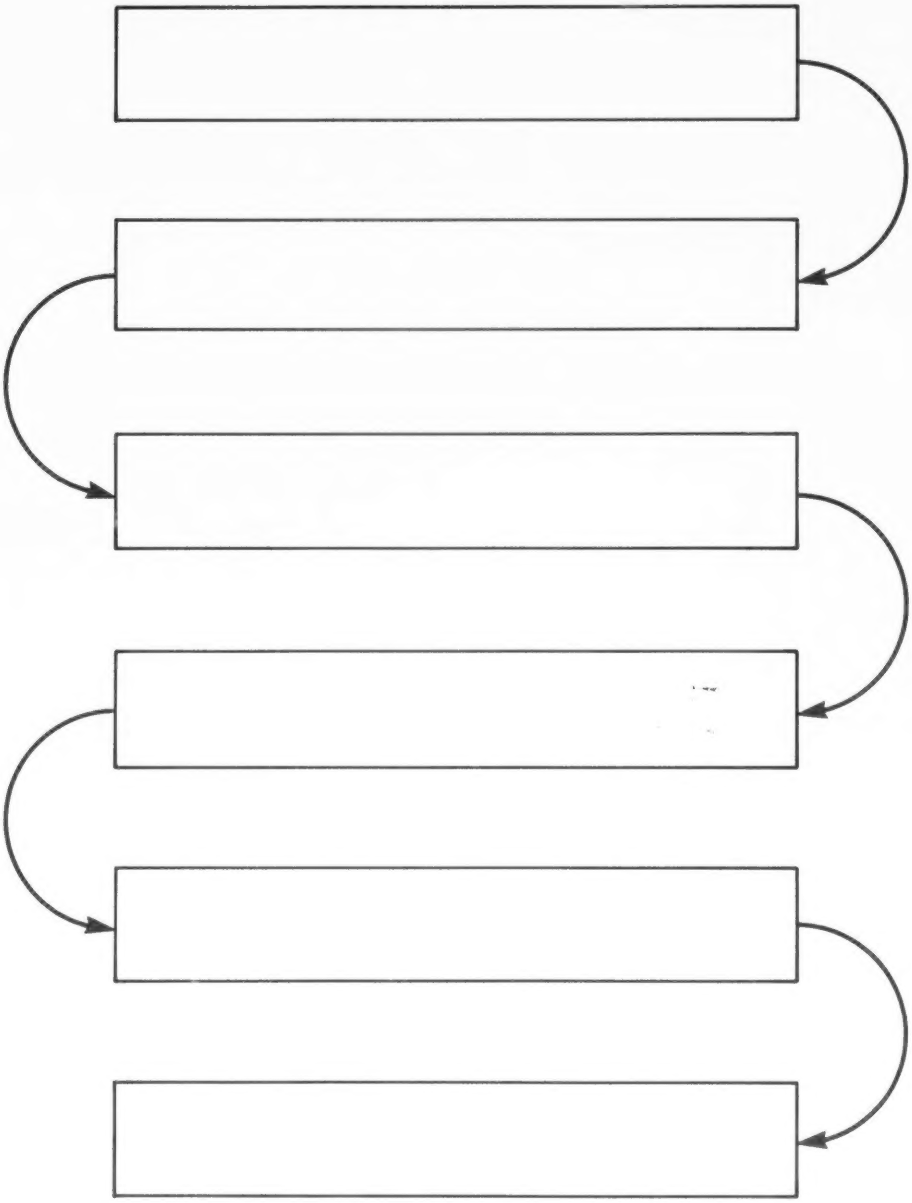
The following publications provide further information on environmental asthma triggers and their control:

Dust 'n' Stuff, National Foundation for Asthma, Inc., Tucson, Arizona 85705

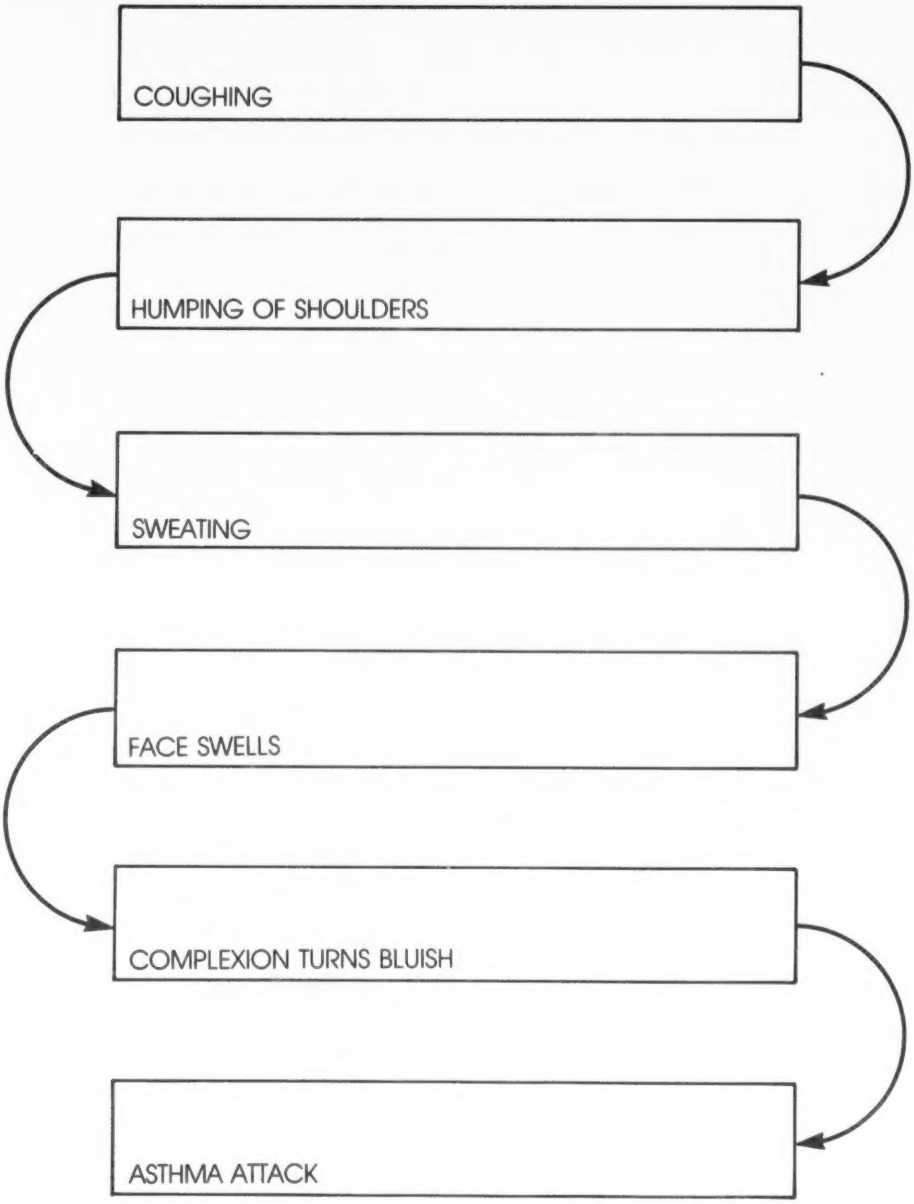
Living With Asthma, Berlex Laboratories, Inc., Cedar Knolls, New Jersey 07927

Strange Case of the White Rabbit—A Teacher's Guide to Asthma in Children, obtainable from your local chapter or affiliate of the American Lung Association

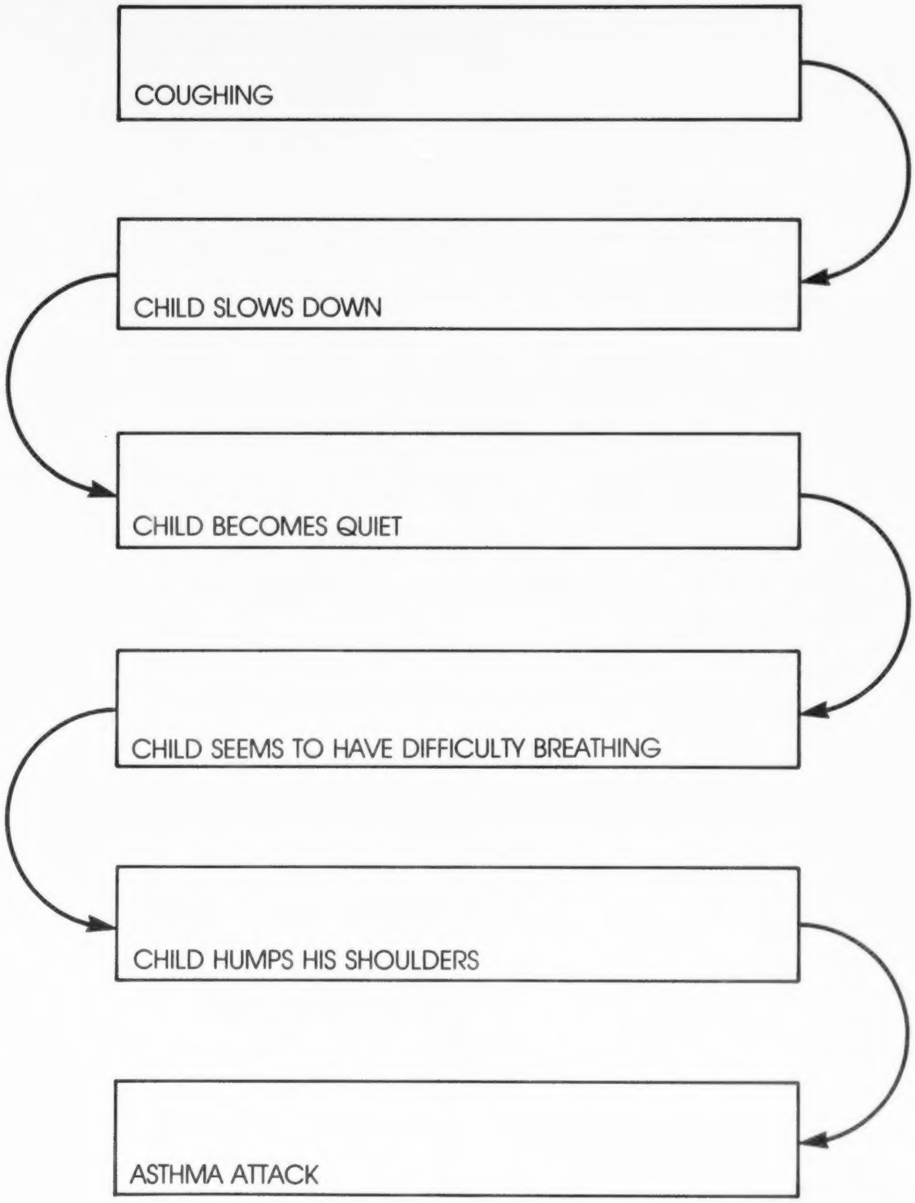
FLOW CHART 1. **EXAMPLE OF BEHAVIORAL CHAIN**



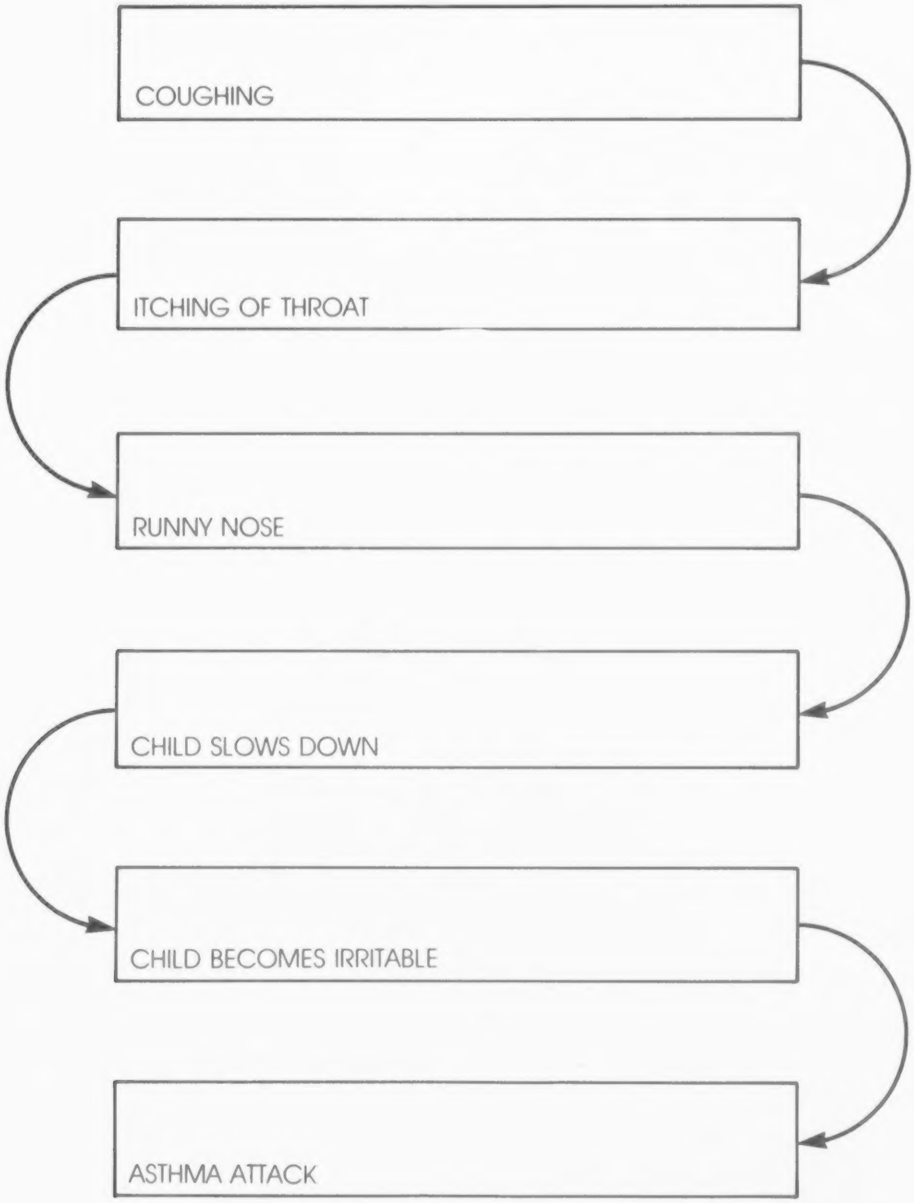
FLOW CHART 2. **EVENTS OCCURRING BEFORE ASTHMA ATTACK WITH ONE CHILD**


COUGHING
HUMPING OF SHOULDERS
SWEATING
FACE SWELLS
COMPLEXION TURNS BLUISH
ASTHMA ATTACK

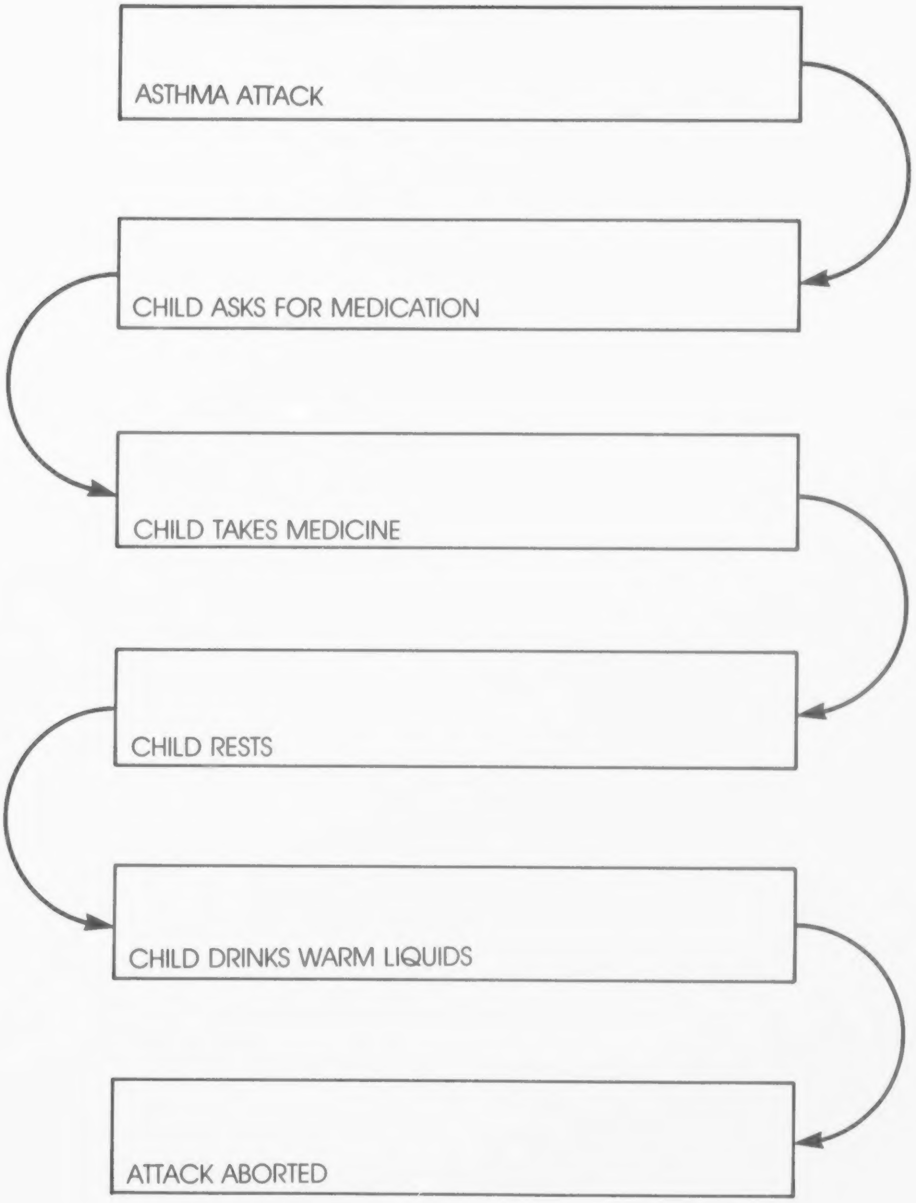
FLOW CHART 3. **EVENTS OCCURRING PRIOR TO AN ATTACK IN A SECOND CHILD**


COUGHING
CHILD SLOWS DOWN
CHILD BECOMES QUIET
CHILD SEEMS TO HAVE DIFFICULTY BREATHING
CHILD HUMPS HIS SHOULDERS
ASTHMA ATTACK

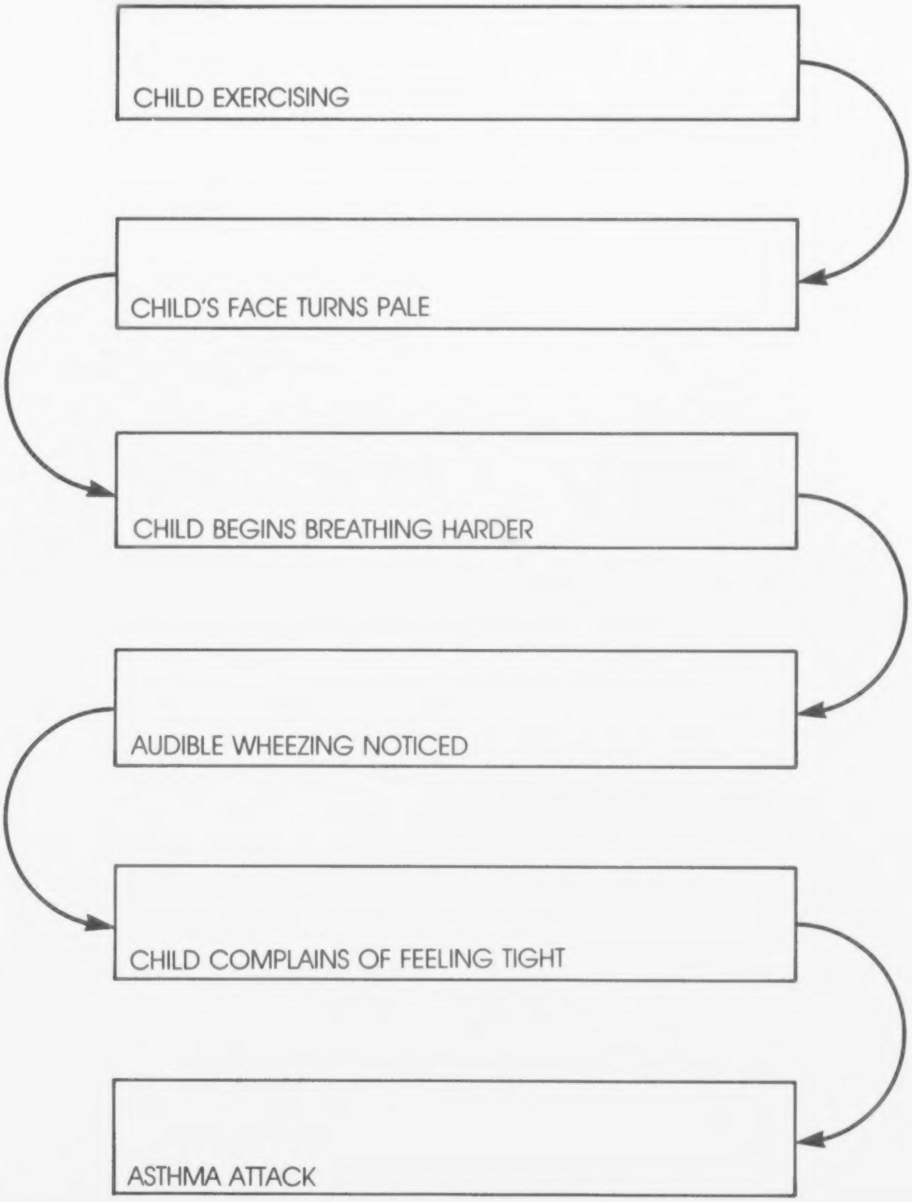
FLOW CHART 4. **EVENTS OCCURRING PRIOR TO AN ATTACK IN A THIRD CHILD**


COUGHING
ITCHING OF THROAT
RUNNY NOSE
CHILD SLOWS DOWN
CHILD BECOMES IRRITABLE
ASTHMA ATTACK

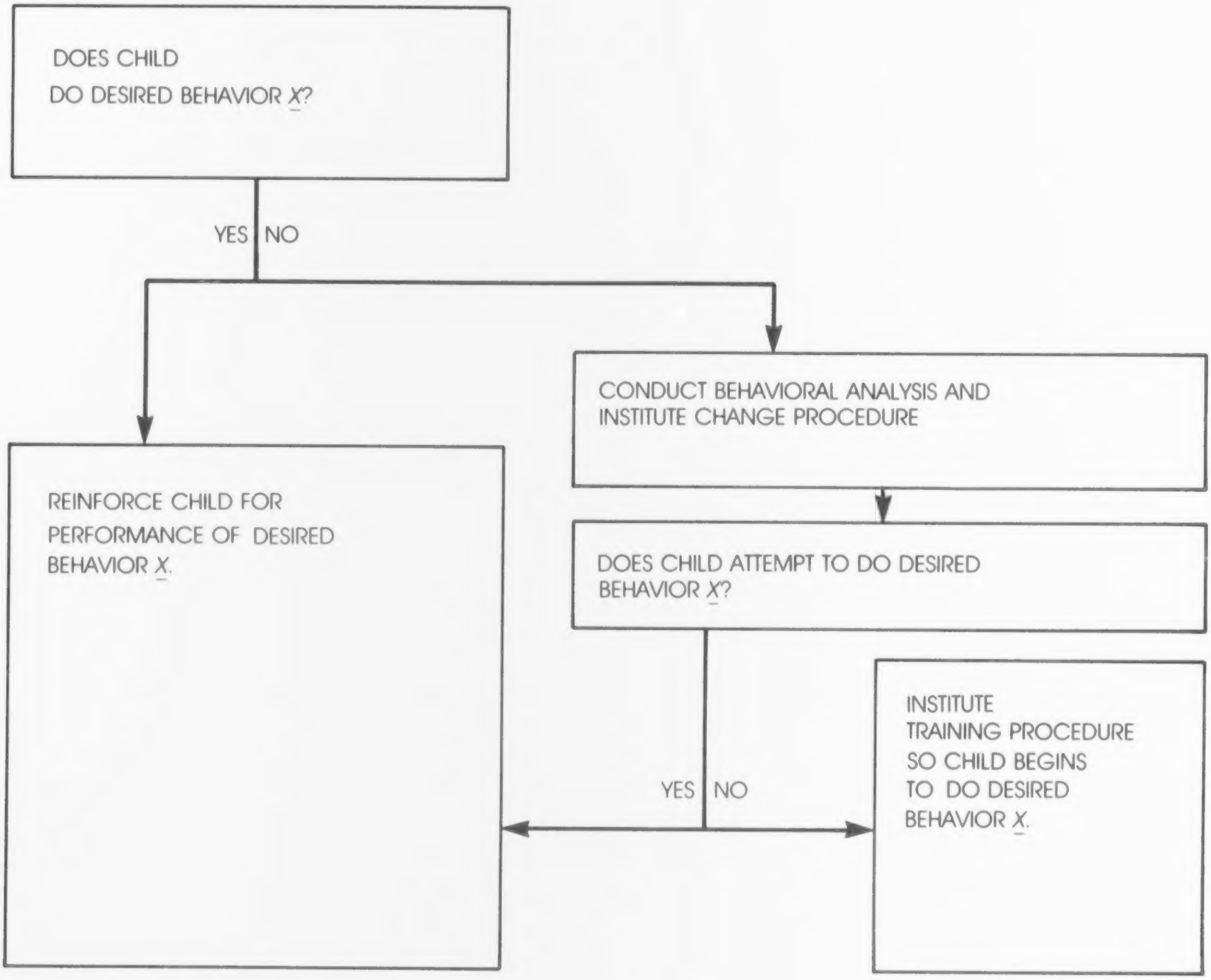
FLOW CHART 5. **EVENTS OCCURRING PRIOR TO AN ATTACK IN A FOURTH CHILD**


ASTHMA ATTACK
CHILD ASKS FOR MEDICATION
CHILD TAKES MEDICINE
CHILD RESTS
CHILD DRINKS WARM LIQUIDS
ATTACK ABORTED

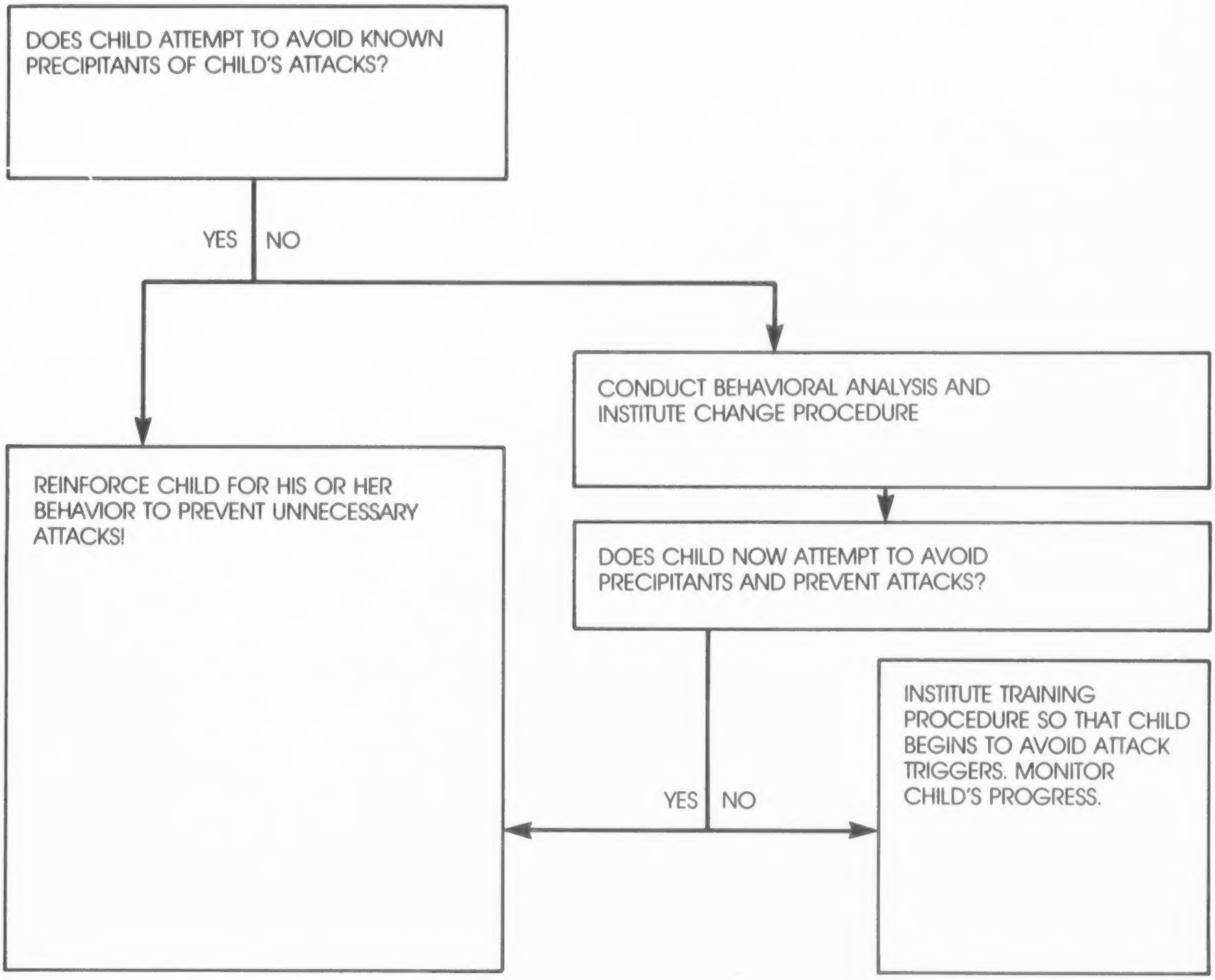
FLOW CHART 6. **SEQUENCE OF EVENTS OCCURRING PRIOR TO AN EXERCISE-INDUCED ATTACK IN CHILD**


CHILD EXERCISING
CHILD'S FACE TURNS PALE
CHILD BEGINS BREATHING HARDER
AUDIBLE WHEEZING NOTICED
CHILD COMPLAINS OF FEELING TIGHT
ASTHMA ATTACK

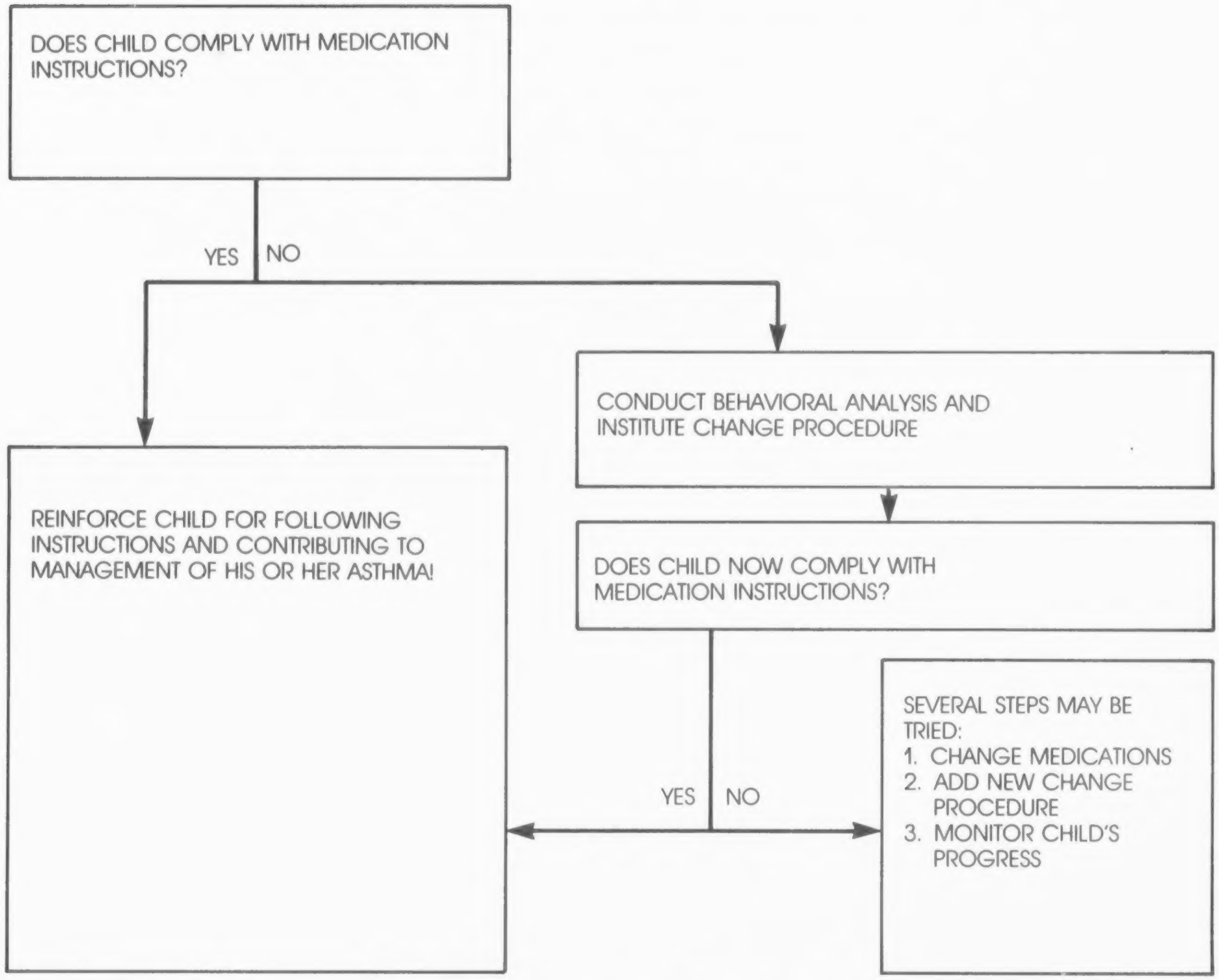
FLOW CHART 7. **PROBLEM SOLVING CHART**


DOES CHILD DO DESIRED BEHAVIOR X?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR PERFORMANCE OF DESIRED BEHAVIOR X.
DOES CHILD ATTEMPT TO DO DESIRED BEHAVIOR X?
YES
NO
INSTITUTE TRAINING PROCEDURE SO CHILD BEGINS TO DO DESIRED BEHAVIOR X.

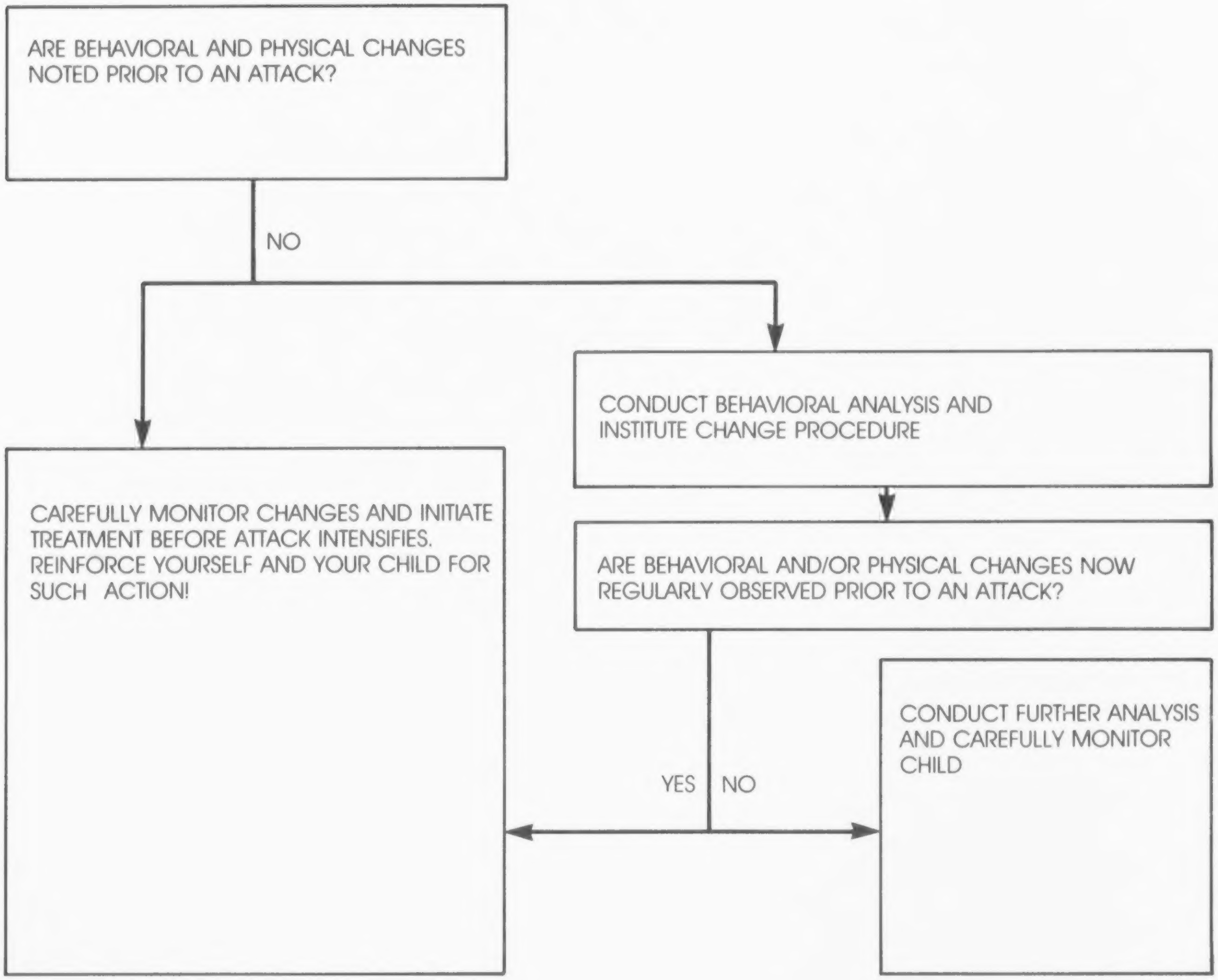
FLOW CHART 8. **PREVENTING ATTACKS: AVOIDING PRECIPITANTS**


DOES CHILD ATTEMPT TO AVOID KNOWN PRECIPITANTS OF CHILD'S ATTACKS?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR HIS OR HER BEHAVIOR TO PREVENT UNNECESSARY ATTACKS!
DOES CHILD NOW ATTEMPT TO AVOID PRECIPITANTS AND PREVENT ATTACKS?
YES
NO
INSTITUTE TRAINING PROCEDURE SO THAT CHILD BEGINS TO AVOID ATTACK TRIGGERS. MONITOR CHILD'S PROGRESS.

FLOW CHART 9. **PREVENTING ATTACKS: COMPLYING WITH MEDICATION INSTRUCTION**


DOES CHILD COMPLY WITH MEDICATION INSTRUCTIONS?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
DOES CHILD NOW COMPLY WITH MEDICATION INSTRUCTIONS?
REINFORCE CHILD FOR FOLLOWING INSTRUCTIONS AND CONTRIBUTING TO MANAGEMENT OF HIS OR HER ASTHMA!
YES
NO
SEVERAL STEPS MAY BE TRIED:
1. CHANGE MEDICATIONS
2. ADD NEW CHANGE PROCEDURE
3. MONITOR CHILD'S PROGRESS

FLOW CHART 10. **MANAGING ATTACKS: RECOGNIZING EARLY WARNING SIGNS**


ARE BEHAVIORAL AND PHYSICAL CHANGES NOTED PRIOR TO AN ATTACK?
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
ARE BEHAVIORAL AND/OR PHYSICAL CHANGES NOW REGULARLY OBSERVED PRIOR TO AN ATTACK?
CAREFULLY MONITOR CHANGES AND INITIATE TREATMENT BEFORE ATTACK INTENSIFIES. REINFORCE YOURSELF AND YOUR CHILD FOR SUCH ACTION!
YES
NO
CONDUCT FURTHER ANALYSIS AND CAREFULLY MONITOR CHILD

PRACTICING **RELAXATION** EXERCISES

The relaxing procedures given here are an abbreviated version of Jacobsen's deep muscle relaxation exercises that were developed in the 1930's.[1] These exercises are based on the idea that by tensing and then releasing various muscles, these muscles and the whole body come to a state of deep relaxation. By practicing these exercises, you can learn to relax quickly, eventually dispensing with the tightening and tensing part of the exercise. To get to this advanced stage does take faithful practice, usually with professional help. But if you understand the general principles, you can use the exercises yourself to learn to relax.

Setting

You should have a quiet, dimly lit place to do the exercises. A reclining chair, bed, or padded floor can be used. It is important that all parts of the body be supported while practicing. The setting in which you practice should be without distractions and should help you to concentrate on the relaxing. At first, you may wish to have someone read the instructions to you or use a tape recorded version of the exercises.

Guidelines

Each practice session may last up to 30 minutes; most will be shorter than that. Because your eyes are closed for the exercises, it is helpful to remove contact lenses or glasses before beginning. Gum should be discarded. There is no talking during the session except for the instructions. If you need to have an instruction repeated, arrange ahead of time for a signal. Raising the index finger is a common signal that is used during relaxation.

Traditionally, someone tells you generally how to do the tensing and releasing that are central to the exercises. Then you lie back and follow the instructions with your eyes closed. The instructions are usually delivered in a monotone. Commercial taped versions of these exercises are available from publishers of psychological works. Doing these exercises by yourself is much more difficult than if you use a tape or follow instructions from another person. But no matter how you choose to use the exercises, read through them first so that you know how to do each particular tensing exercise.

Basic Instructions

What follows is a sample of what the tensing/relaxing instructions would sound like if you were listening to someone guide you through the exercises. The instructions may vary according to the situation for which relaxation is being used or the instructor. The general instructions and muscle groups are fairly standard. If a particular tensing exercise does not seem to be right for you, try to discover another way to tense that particular muscle or muscle group and substitute your own exercise. Experiment with finding a substitute at some time other than during your practice sessions. There should be no distraction from your practice session.

---

[1] Jacobsen, E. *Progressive Relaxation.* Chicago: University of Chicago, 1938.

When you are instructed to "tense" a certain muscle, you should tighten and tense it, but stop short of cramping it. You will be instructed how to tense each muscle in the next section. You are to *hold the tightness* for approximately *5 to 7 seconds* for each muscle. When you let go of the tightness, do it all at once, quickly. Then stay in that *relaxed state for approximately 30 to 40 seconds.* Concentrate on how good it feels in that relaxed state. While relaxing, many people experience a heavy, warm feeling. Just let yourself sink into the comfortable, relaxed state and savor it. An important part of the exercises is to become conscious of how your body feels when it is tense, and, in contrast, how it feels when it is relaxed.

In the beginning, it helps many people to practice tensing and relaxing each muscle twice: tense and then relax the muscles of the hand; then repeat the tensing and relaxing of the hand muscles. Then move on to the arm muscles. After you have practiced several times and find that you can relax your muscles well, you can dispense with doing the tensing twice. Later you can also start to group muscles into larger units, such as tensing your hand and arm muscles at the same time.

You should practice at least two times each day. Many people find it easiest to practice at set times each day.

Some people create a calm, peaceful scene or image in their mind to help them relax. Feel free to imagine and visualize any image that helps you become comfortable. Some common words and images about relaxation are floating in space, sinking or floating down through layers of relaxation, warmth, heaviness, soothing, loose, spreading relaxation, limp, etc. Any image or word that helps you relax can be used. Substitute your own word for any word in these exercises that you do not like or makes you uncomfortable.

Muscle Groupings Sequence

1. Hands, lower arms
2. Upper arms, shoulders
3. Scalp, forehead, eyes
4. Eyes, nose, mid facial muscles
5. Lower facial muscles, jaw, mouth
6. Neck
7. Chest, shoulders, upper back
8. Lower back, stomach
9. Buttocks, hips
10. Thighs
11. Lower leg, calf
12. Feet

The Exercises

First, make yourself comfortable. Be sure that your weight is fully supported and you are as comfortable as possible. Move around a little to be sure you have found the most comfortable position for your body.

Now close your eyes and relax. Take a deep breath and let it out slowly, feeling yourself release tension as you let out your breath. Just let yourself relax as much as possible, breathing in and out in a comfortable, relaxing way. Before beginning the tensing and releasing exercises, remember to pay attention to the muscle groupings and also to the way it feels when you tense them, then the way it feels when they are relaxed.

Now you can begin. With both of your hands make a tight fist and squeeze hard. Keep squeezing and hold it tightly (for 5 to 7 seconds). Feel the tension in your hands and lower arms.

Okay, now relax, let go all at once quickly. Let the tension flow out the tips of your fingers. Notice the difference in the way your hands and lower arms feel now. You may feel warmth spreading through your hands and arms. Take time to feel how good it is to have your hands so relaxed. Stay relaxed for a total of 30 to 40 seconds.

> **As mentioned before, the first few times you practice, it is helpful to do the tensing and relaxing sequence twice with each muscle group. So repeat the tightening and relaxing of your right hand and lower arm now. For the rest of the instructions, the asterisks will be used to remind you to repeat the previous exercise.**

Move to your upper arm muscles. To tense these, push your elbows down against the bed or chair. Push them now and hold it. Hold it and feel the tension throughout your upper arms and shoulders for 5 to 7 seconds.

Now relax, relax your arms completely. Feel your relaxation spreading throughout your upper arms and shoulders. Just concentrate on the nice feeling of being relaxed. It is important to pay attention to the feeling of relaxation so you learn the difference between the feelings of tension and relaxation (30 to 40 seconds).

> **Again, tense and relax your upper arms, following the same time sequence as before. An alternate way of tensing your upper arms is to press your elbows down and at the same time pull your elbows in toward your body. Use which ever method works best for you.**

Move to the muscles around your face and neck next. While you are tensing and relaxing these muscles, try to let your arm and hand muscles stay relaxed.

To tense your face muscles, lift your eyebrows as high as possible and keep them there. Do this now, and feel the tension around your eyes and forehead (5 to 7 seconds).

Now let it go. Relax and feel your scalp smoothing out as the tension is released. Focus on the calm feeling of being relaxed and comfortable. Some people feel a tingling after doing this exercise. Just relax and enjoy this feeling of relaxation for 30 to 40 seconds.

> **Tense and relax eyebrows again**

Now move down your face to your nose and cheeks. To tense this area, squint your eyes and wrinkle your nose at the same time. Do this now and hold it tightly. Feel the tension across your nose and around your nose (5 to 7 seconds).

And relax all at once. Feel the tension flow out of your face, across your cheeks and away. A wave of relaxation flows over your face. Just enjoy those feelings for 30 to 40 seconds.

Repeat exercise for face and nose

Now move to your lower face and jaw. To tense this area, bite your teeth together hard, holding your teeth together and pulling the corners of your mouth back. Do this now and feel the tighness in your facial muscles. Hold it for 5 to 7 seconds.

Now relax. Let go of that tightness all at once. Your jaw will hang loose and relaxed. Your mouth may be open slightly. Attend to the feeling of having your face relaxed and how good it feels (30 to 40 seconds).

Repeat

Next move to your neck muscles. To tense the muscles in your neck, pull your chin toward your chest, but keep it from touching your chest. Feel the tension in the front and back of your neck as you strain. Hold it tight (5 to 7 seconds).

Now let it all go. Let your head fall back naturally, without any tension. Just relax and attend to the feeling. You may feel waves of relaxation sweeping over you (30 to 40 seconds).

Repeat

Review the muscle groups that you have covered so far. As the muscles are named, focus your attention upon them. If you feel any tension in a particular muscle, try to let that tension go as the muscle is named. If you have a lot of tension, then do the tensing and relaxing exercise for that muscle. Wait until that muscle feels relaxed before moving on to the next muscle group.

Focus on your hands. They may feel warm and heavy. As you breathe in and out, see if you can let any more tension out of your hands (10 to 25 seconds). Move up to your lower arm muscles (10 to 25 seconds). Now, upper arm muscles (10 to 25 seconds). Become aware of how comfortable and relaxed your hands and arms are—completely relaxed and comfortable. Enjoy how good it feels. Now your face and neck muscles. If there is any tension, think of letting it drain out of your face, down your forehead, over your cheeks, through your neck, down your arms, and out the ends of your fingertips. You should feel warm and relaxed.

Next move on to the muscles of your chest and stomach. To tense the muscles of your chest, shoulders and upper back, pull your shoulder blades together. Think of making them touch. Pull them tightly together. Hold the tension and feel it (5 to 7 seconds).

Now let it all go. Let your shoulders slump into a comfortable position. Allow your upper trunk to feel completely relaxed. Become aware of how slowly and calmly you are breathing. Just relax (30 to 40 seconds).

Repeat

Next work on your stomach muscles. To tense the stomach muscles suck your stomach muscles in as if you were trying to have your stomach muscles touch your back, or as if someone was about to hit you hard in the stomach and take your breath away. Hold it. Concentrate on how knotted up those muscles feel (5 to 7 seconds).

Now relax, let your stomach hang free. Just relax and let a little more tension go with each breath that you breathe out. Feel your stomach uncoil. Just enjoy the feelings of the muscles as they loosen up, smooth out and relax more and more (30 to 40 seconds).

Repeat

You are probably feeling deeply relaxed from the waist up now.

Next move to the muscles around your buttocks and hips. To tense the muscles in this area, squeeze your buttocks together hard and hold it. Do it now and study the tension that is created (5 to 7 seconds).

Now relax. Just take a few seconds to feel your muscles spread out. Sink into the feeling of being really relaxed (30 to 40 seconds).

Repeat

Moving down to the muscles in your thighs, tense these muscles by tightening them. Feel how hard your thighs become (5 to 7 seconds). An alternate method of tensing here is to lift the legs very slightly to create tension in the thighs.

And relax. Let all the tension go from your thighs. Feel those muscles smooth out as waves of relaxation come over you. Settle into the comfortable feeling of being relaxed (30 to 40 seconds).

Repeat

Now tense your calf muscles by bending your toes back and stretching your legs out in front of you. Bring your toes back as if you're trying to touch them to your knee caps. Hold that tension (5 to 7 seconds).

Now relax. Your legs will flop back on the chair or bed. Feel how heavy your legs feel. They are comfortable and relaxed. Pay attention to how you feel now. Comfortable.... calm and relaxed. Just enjoy that feeling (30 to 40 seconds).

Repeat

The next and last parts to relax are your feet. To first tense the muscles in your feet, point your toes hard toward you. Now point them as hard as you can away from you and hold that tension. Hold no longer than 5 seconds.

And let it all go. Feel your feet grow warmer as the relaxation spreads over them. Enjoy that feeling of the muscles smoothing out. Relax and attend to the feeling (30 to 40 seconds).

Repeat

Now review the muscle groups from your neck down. As each is named, concentrate on that muscle group and see whether there is any tension there. As you say them, try to let yourself relax the muscles even more. If you feel tension in a muscle, do the tensing and releasing exercise for that muscle. Wait until you feel ready to go on. With each breath, enjoy a deeper state of relaxation.

Concentrate on your upper chest. If there is any tension there, let it go. Let it flow from your body (10 to 25 seconds).

Next think about your stomach. Let any tension go from there. Feel how smooth and comfortable all the muscles in your trunk feel. Just enjoy (10 to 25 seconds).

Last, your legs and feet. They should feel comfortable and relaxed. The muscles are all unwound and stretched out. Enjoy relaxation and see if you can breathe out a little more tension with this next breath.

Continue relaxing for the next few minutes. Enjoy the warm feeling of being relaxed. Very relaxed and comfortable. Just stay relaxed and comfortable for 3 to 4 minutes.

Now end the relaxation session. It is important to do this slowly. With your eyes still shut, count to four. On the count of "one," move your hands and arms around to wake them up. On the count of "two," move your feet and legs around. On the count of "three," move your head and neck. On "four," open your eyes. Then sit up and move around in your place. Begin counting now: "one," move your hands and arms (5 seconds); "two," move your feet and legs (5 seconds); "three," move your head and neck (5 seconds); "four," open your eyes and then sit up. Move around, then stretch and stand up.

PARENTS' SESSION **SIX**

CONCURRENT CONDITIONS

GOALS

- To examine and discuss potential problem areas that exist and happen at the same time as an asthma attack.
- To gain control over any concurrent conditions that add stress.

RESOURCES

Leader Background Material:
  Concurrent Conditions: Information for Discussion Leaders
  Annotated Checklist: Concurrent Conditions
  Leading Questions for Discussion
  Discussion of Flow Charts
Handouts:
  Concurrent Conditions Checklist
  Asthma Information for School Personnel
  Asthma Medication Information
  Emergency Sheet
  Attack Management
  Flow charts
  How to Practice Belly Breathing

ACTIVITY LIST

Topic/Activity	Leader Background	Handouts
Welcome and Review		
Discussion of Concurrent Conditions	Concurrent Conditions: Information for Discussing Leaders Annotated Checklist: Concurrent Conditions Leading Questions	Concurrent Conditions Checklist
Behavior of Child		
Behavior of Parents		Attack Management Steps
Behavior of Siblings		
Behavior of Teachers and School Personnel		Asthma Information for School Personnel Asthma Medication Information Emergency Sheet
Behavior of Medical Personnel		
Activities with Handouts (optional)		Asthma Information for School Personnel Asthma Medication Information Emergency Sheet Attack Management Steps Don't Be Shy: Ask Questions
Flow Charts (optional)		Flow Charts
Belly Breathing		How to Practice Belly Breathing

PARENTS' SESSION SIX

CONCURRENT CONDITIONS—TEACHING NOTES

Orientation for the Leader

Topics for discussion touch on many of the interpersonal and family dynamics that may help or hinder acceptable asthma management. The purpose of the group is to allow parents to recognize and talk about these things and to help each other come up with ways of solving problems. In many cases, some parents will already have worked out ways of satisfactorily dealing with various situations and they can learn from each other by sharing expertise in different areas.

Many items on the concurrent checklists have been covered in some degree in previous sessions. Solutions to problem areas need to be built on what the group already knows about positive reinforcement and behavioral terms and techniques. The group itself should be able to generate more suggestions by this session.

Resist the urge to provide all the answers. If someone raises an issue, refer the response back to the group. Ask other parents how they might handle it or what could be done instead. Sometimes it may be necessary to invite participants to offer viewpoints and approaches. This may be a good time to review the guidelines for fostering positive group dynamics in the leader's guide.

If certain individuals persist in believing or fostering practices that are detrimental to the child or not consistent with self-management, the leader can handle this in a number of ways. First, he/she can refer the issue back to the group to see if they will offer a more satisfactory arrangement. If this does not work, the leader may have to be blunt but tactful by saying, "I disagreee with you because . . ." Sometimes people will not change and the leader may have to accept this as well.

The leading questions in the background are offered as backups. The moderator can use some of these if he/she wants to guide discussion in a certain direction. The leader should not feel obliged to use all or even most of them. They are simply offered as an example of the *types* of questions that can be used for the topic at one time or another, depending on the group. However, the leading questions are helpful for guiding discussion towards self-management approaches.

Most of the flow of the discussion should come from the group itself. Many unique approaches and anecdotal observations will come out and the leader often learns much from the parents. This accumulated wisdom and practical hints can then be shared with other groups who are seeking practical solutions.

For this session, there is not a body of information to convey but rather selected facts to interject at strategic times to guide thinking or reinforce good responses. However, a number of points should be stressed:

1. Management steps for the child.
2. Management steps for the parents.
3. Helping the child take more responsibility for the control of an attack.
4. Educating spouses and siblings about what to do during an attack.
5. Educating school personnel about asthma and about what to do if an attack occurs at school.

6. The need to be assertive with medical personnel in emergency situations.
7. Planning ahead while traveling:
    a. taking along sufficient medications
    b. carrying instructions for emergency treatments

These approaches are all consistent with the concept of asthma self-management.

Welcome and Review

Any questions from last week?

Did you notice anything different about your child's asthma after our discussion last week?

Who was able to identify a trigger that you had not suspected before?

Did anyone recognize an early warning sign?

Did you institute any changes around taking asthma medication? Please tell us what you did and if it improved compliance.

Allow time for participants to contribute to discussion. Encourage responses from everyone.

Discussion of Concurrent Conditions Checklist

definition

Explain what is meant by concurrent conditions.

Our subject for today is concurrent conditions, things that may happen during an asthma attack and add to its stress. If the problem situations are corrected, the positive behaviors can contribute to the better management of attacks.

Distribute Concurrent Conditions Checklist.

You will notice that concurrent conditions fall into the categories of behavior of the child, parents, siblings, school personnel, and medical personnel.

Take a few minutes to read this list and check the items that occur in your family or are of concern to you.

instructions

Allow time for the group to read and check the lists.

Today we will discuss these items and share our experiences with them. We will try to come up with solutions to common problems and to see if any of the techniques of behavioral change may offer some help.

Proceed with an item-by-item discussion.

Behavior of the Child

sample opening questions

Has anyone checked any of the items under Behavior of the Child?
Have you experienced any of these behaviors?
Which behavior occurs most often in your family?

Who checked the first item?
Which item is a problem in your family?

discussion hints and procedures

As the group elaborates on a particular item, make sure everyone who wants to participates. Ask other members of the group if they have had a similar problem and how they handled it. It is important to help group members see themselves as experts on certain aspects of asthma management.

To keep discussion moving and to draw in other members of the group, you can use probes such as:

Would anyone do it a different way?
How would someone else handle this? How about you ____________(name)?
What other considerations would you have?
What else should you remember to do?
Can anyone suggest a way to change the situation?

Some of the items will raise little discussion; others, a great deal.

Issues That May Arise and Some Ways of Handling Them

Determining Causes of the Behavior

Many problems can be worked out by determining *why* a particular behavior is occurring. Often parents can identify the real reason if they think about it. Sometimes it is also helpful for parents to ask the child why he/she is doing or not doing something. Then parents can work on the underlying causes and try to correct the situation.

Child Does Not Assume Responsibility for Attacks

Is it because the child has never been given the chance or trusted to do so? If yes, parents may think of ways to help the child take more responsibility. If the child does not take responsibility because he/she does not know what to do, then parents can take the opportunity to review attack management steps with the child and see if the child has remembered the things taught in the children's sessions.

Child Does Not Ask for Help

If a child waits too long before asking for help during an attack, it may be because the child does not know at what point to seek help from an adult. The child may appreciate a review of attack management steps and reassurance from parents that they will help when the child asks for it.

Child Fakes Attacks

Parents are often concerned that this may happen, but professionals report that this rarely occurs.

At times a child may be anxious and fear an impending attack but may not be faking the concern.

Other Issues

Ideas in the leading questions found in the background material may also be helpful.

Behavior of Parents

sample opening questions

Are any of these items a problem in your family?
Did anyone check one of the items?
What happens in your family when a serious attack occurs?
Do you have a plan or not?

discussion hints and procedures

Allow time for discussion. Proceed item by item. Encourage input from everyone. Use the suggestions for moving the discussion from other sessions and sections.

handout

Distribute Attack Management Steps.

This reviews in detail the steps for managing an attack at home and discusses the times when it is advisable to seek medical help. Be sure that all family members are familiar with the steps.

Issues That May Arise and Some Ways of Handling Them

Behavior of Parents

Most problems in this category can be solved by parents having an open discussion with one another at a time when the child is not experiencing an attack. Spouses need to talk about what is expected from each other during an attack and to create a plan for attack management. Making each other aware of concerns and feelings is also important.

Temper of Discussions

Allow discussion to continue as long as legitimate issues are being aired. Do not let it degenerate into intrafamily squabbles. Suggest that such a discussion be continued at home.

Behavior of Siblings

sample opening questions

Do any of these things happen in your house?
What item is of most concern to you?
Do other children in the family panic during an attack?
Are other children supportive during an attack?

discussion procedures

Allow time for extended discussion. Encourage input from everyone. Use the suggestions for guiding discussion from other sections and sessions. Let the parents determine the pace and topics of discussion. However, consult the list of leading questions in the background material to guide the group toward solutions that are consistent with self-management concepts.

Issues That May Arise and Some Ways of Handling Them

Lack of Understanding

Problems with brothers and sisters often occur because they do not understand what is happening during an attack. To handle this, parents should talk with siblings at a time when things are calm and be sure siblings know what they can do to help.

Jealousy

If siblings behavior is due to jealously, then they need attention from parents at a time other than when an attack is occurring.

Panic

Sibling's may panic because others around them panic. All should be taught relaxation techniques and should practice being calm during an attack.

Other Issues

Items covered in the leading questions may be helpful.

Behavior of Teachers and School Personnel

sample opening questions

Does your child have problems with asthma in school?

Does your child miss much school because of asthma?

What problems have you had with teachers, gym class, or school administrative personnel because of asthma?

Does your child have problems with schoolmates' teasing because of asthma?

What experiences have you had with school and asthma?

Which items on this list have been a problem for you?

discussion hints and procedures

This topic often raises much discussion and takes up a good proportion of the session time. Parents often have lots of complaints to raise and also can offer some innovative solutions. Allow ample time for discussion and experience sharing.

handouts

Distribute the handouts Information on Asthma for School Personnel, Asthma Medication Information, and Emergency Sheet. Explain their purpose.

These handouts were developed to help parents share information about asthma with school personnel so they can oversee the daily treatment of the child and act correctly during emergency situations. Parents should complete the Emergency Sheet and Asthma Medication Information sheet with specific information for their child.

Extra copies of the completed Emergency Sheet might also be given to babysitters, grandparents who act as caretakers, day care supervisors, camp counselors, or others who need to know this information.

Be sure to take time to draw a map of the fastest route to the emergency room or the doctor's office.

Some Ways of Handling Problems in School

Problems with school personnel often occur because of lack of education about asthma. Handouts from the Living with Asthma parents' course may help inform teachers of the nature of asthma and its management.

Another approach is to arrange a conference with the child's teacher at the beginning of the school year. During this conference the teacher can be informed about the nature of asthma and the steps to take if the child has an attack at school. The teacher should also understand that usually the child is *not* sick and should not be treated differently from the other children.

Physical education teachers, in particular, should understand that the child with asthma need not be overprotected yet should not be pushed too hard either. They should be informed about the nature of exercise induced asthma, if it is a problem for the child, and how the child has learned to deal with it.

Remind parents to let children fight their own battles whenever possible. Parents may come up with ways to help their children deal with peers and teachers and with responses children can give in difficult, asthma-related, school situations.

Behavior of Medical Personnel in Emergency Situations

sample opening questions

Have you ever had problems with emergency room personnel?

Have you ever had to wait a long time?

Have emergency room personnel ever given your child a treatment that did not work?

Have you ever had to explain things to emergency personnel in an out-of-town hospital when an attack occurred on vacation or while traveling?
How many of you have had experience with the items on this list?
How do you deal with medical personnel regarding your child's asthma?
Do you inform them of pertinent information? How do they respond to this? What solutions can you suggest?

discussion hints and procedures

Allow time for discussion. Cover all the items on the list. Encourage input from everyone and problem solving. Consult the leading questions in the background material to guide thinking in certain areas. Use suggestions for moving along discussion from other sections and sessions.

handouts

Refer parents again to the Emergency Sheet.

You may wish to have your doctor fill out and sign a copy of the Emergency Sheet that you can carry with you when traveling.

Some Ways of Handling Problems with Medical Personnel in Emergency Situations

Problems with medical personnel may occur wth emergency room or medical staff in hospitals to which the child must be taken while traveling or on vacation. Sometimes it may happen with hospitals in the hometown as well. These personnel are often not familiar with the treatments that work for a particular child and also may not understand the urgency with which a serious asthma attack should be treated. It is helpful, in these situations, for parents to carry emergency treatment instructions from the child's doctor to present to the hospital personnel and to keep records of the kinds of measures that were effective in past situations. Assertiveness on the part of parents is often also necessary.

Activities With Handouts

If handouts were not distributed during discussion of the checklist topics, the leader can give them out afterwards, and create new discussion and activities.

Information On Asthma For School Personnel and Asthma Medication Information

Distribute Asthma Information for School Personnel, Asthma Medication Information, Emergency Sheet, and Attack Management Steps.

These handouts were developed to help parents share information about asthma with school personnel so they can oversee the daily treatment of the child and act correctly during emergency situations. Please complete Asthma Medication Information sheet with specific medication information for your child.

Emergency Sheet

Have a discussion on who this information should be given to and how it should be introduced or explained. Some suggestions include babysitters, grandparents, day-care supervisors, teachers, and camp counselors.

Allow time for parents to draw the map to the hospital. Ask parents if they can remember all the turns and street names so clear instructions can be given to others who may have to transport their child. Next week ask if parents remembered to check any of the street names or directions about which they were unsure.

Next week ask parents if they filled in all the necessary telephone numbers.

Attack Management Steps

This handout provides a review of how to prevent and manage an asthma attack.

Allow time for parents to read the handout.

Ask if there are any questions.

Ask how parents feel about certain points.
Ask for their practices in certain situations. For example:

When do you decide to call the doctor?
Did you ever call the doctor and find out that things would be all right by following treatment steps at home?

Don't Be Shy, Ask Questions

Refer to the handout from last week and ask for parents' experiences communicating with medical personnel. Ask if anyone has taken a course in assertiveness skills.

Flow Charts: Optional Activity

If flow charts were not used in an earlier session, refer to script in the teaching notes of session 4, and the background of sessions 5 and 6.

Belly Breathing: Optional

Distribute handout How to Practice Belly Breathing

Your children have learned this deep breathing and relaxation technique in an earlier session. You can practice it at home with your children. Your children have been asked to practice it 10 times each day.

Closing

We've talked about lots of problems that accompany an asthma attack. I hope the ideas we've discussed will be helpful. Remember that solving these problems will take time and effort on your part. These problems will not go away overnight, but with open communication and asthma education for all involved, they can be eased!

Have a good week.

CONCURRENT CONDITIONS: INFORMATION FOR DISCUSSION LEADERS

Concurrent conditions are those circumstances that accompany an attack and influence management of the attack. Often, attitudes and behavior of the child, parents, siblings, and school personnel during an attack greatly influence the child's abilities in self-management. The following information on concurrent conditions should serve as background material for discussion leaders. It may be useful as starting points for discussion or to stimulate suggestions from the group. Topics follow the same order as those in the annotated and unannotated checklists. Additional solutions are given in the annotated checklist which follows the same order as the participants' checklists. Space is provided on the checklist to write in any solutions that the class devises.

Behavior of Child

If your child does not assume responsibility for managing the attack, it is likely that you have not encouraged the child to do so, or that you have not reinforced the child whenever he/she has taken steps to do so. Analyze the reasons your child relies on you to be told what to do. Then use the principles described in Session 4, Instituting Behavioral Change, to teach self-management.

Be sure that your child knows how to use medications properly for attacks. Check with the physician about any concerns or questions. The nurses in your doctor's office can frequently answer your questions.

Many children have a hard time discontinuing their current activity and settling down to rest during an attack. If this is a problem with your child, take time when the child is NOT experiencing breathing problems to discuss it. Help your child decide on acceptable activities to occupy the time while resting.

Together decide what your child should do when early warning signs are noticed and if the breathing problems become more evident. Plan a shopping trip for supplies for quiet activities and favorite warm liquids. Have several optional activities available and keep them in one place. If attacks frequently occur away from home, assemble a traveling kit that goes with the child for visits and excursions. Encourage the child to remember this kit; do not take all the responsibility yourself.

If your child panics during attacks, he/she may need professional help learning how to substitute relaxation for panic. The use of "belly" or diaphragmatic breathing is controversial for asthma management. Some physicians recommend using the breathing exercises, others say it does no good. Instructions (handout 7) are included for anyone who is interested. Using diaphragmatic breathing may give your child something concrete to do during an attack. It should not be used as a substitute for other management steps, but may be a helpful addition.

If the child does not know what emergency steps to take during attacks, talk to the child at a time when he/she is not having breathing difficulties to come up with a plan for what to do. Go over steps in EMERGENCY SHEET. Also, it may be helpful to go over other aspects of attack prevention and management.

The goal of planning is:

- To help the child learn what to do during breathing difficulties
- To help the child find ways to avoid triggering substances and events
- To find ways for the child to be reinforced for noticing breathing problems and taking action to alleviate them.

Remember to reinforce any behavior that shows your child is assuming responsibility for his/her own management of asthma.

If your child receives no reinforcement for being sick or having attacks, it is not likely that he/she will fake attacks.

Behavior of Parents

Adults also operate by the laws of reinforcement. Unfortunately, adult behavior is usually more complex and is more complicated to examine and then change. When there are problems with the parents during attacks, it is best if the persons involved openly discuss the problem areas. In a problem solving discussion, try to stick to asthma management or the specific problem area of management. Agree ahead of time not to discuss other concerns or disagreements.

Try to agree on steps or procedures to follow when an attack occurs. If necessary, specify who handles what and when. One partner may be unaware of how the other feels about the asthma management. A mutual airing of concerns may go a long way toward problem resolution. If the adults cannot come to mutually acceptable agreements, seek professional help. The problems are probably not insurmountable, but may need an outside referee or arbitrator to help. Small problems that are left to fester may cause serious problems in the future.

It is extremely important that the adults allow and encourage the child to be responsible for attack management. The child must learn how to take care of him/herself when an attack happens.

It is easier to encourage and help a young child learn a new behavior than to help an older child change already established behavior patterns. Always encourage the child's steps toward self-responsibility.

Behavior of Siblings

The behavior of siblings is seldom a major problem in asthma management. Frequently, however, siblings do not know the steps to take during an attack. Discuss the important points of attack management with them. Keeping a completed EMERGENCY SHEET (handout 3) posted can help with specific instructions. When the parents are home and an attack occurs, let the siblings take control so that they can practice attack management with supervision. Be sure to explain to them what is happening during an attack.

If siblings interfere with attack management, carefully analyze the parents' behavior toward the siblings. Perhaps not enough attention has been given to them at times when the other child is not sick. Do something special with them at another time and let them know how much you appreciate their understanding and help when their brother or sister is sick.

Behavior of Teachers and School Personnel

There is great diversity in how school personnel deal with a child who has asthma. It is common for parents and children to have to educate school personnel about asthma. Many school personnel have heard the myths of asthma and must be gently reeducated with facts. Sending printed materials to school is often helpful. Teachers accept facts from a printed pamphlet of an "official" organization, such as the

American Lung Association, more readily than from a "worried" or "pushy" parent. The American Lung Association and other national organizations publish several helpful pamphlets.

When specific problems with the child and school arise, try to allow the child to work out a solution. If you feel that you must intervene, set up a conference with all those involved. School policies are made for the greatest number of people, and those policies do not take special cases into consideration. If you go in with the attitude of problem solving, a solution can usually be found. Be prepared for a struggle, if amiable solutions cannot be found.

A word about gym teachers: Problems are frequently noted with gym activities because of the high incidence of exercise-induced asthma. The gym teacher is in the difficult position of allowing the child with asthma to stop an activity and not allowing the others to do so. Discussing exercise-induced asthma and sending pamphlets to school may help the gym teacher become better educated about asthma. Perhaps the school nurse can help. See the NHLBI Reading and Resource List for titles of useful pamphlets. Be aware that your solution may not be completely satisfactory. Be supportive of your child in his or her struggle with the problem, but remember that it is his or her problem, not yours. If the other areas of the child's life are supportive, reinforcing situations, the gym periods can be bearable.

Behavior of Medical Personnel

Problems encountered with medical personnel are difficult to resolve because most patients are reluctant to be assertive. A tactful but assertive conversation with medical personnel is often necessary. To prevent the type of problems on the checklist, try to find a doctor who is open to communication with both parents and children.

In emergencies, having records and recommendations from the regular physician should help smooth the way for proper treatment. Using emergency rooms recommended by the regular physician should help minimize the problem of inconsistency in emergency procedures.

Try to be tactful when offering suggestions. Remember to reinforce the medical personnel who are helpful. Everyone needs the periodic reassurance that efforts are appreciated.

If an extended trip away from home is planned, ask the physician to provide a "Current Treatment Summary" in case problems arise. Have available a record of medications that have been effective in the past. Offer these to the medical personnel as soon as help is sought.

ANNOTATED CHECKLIST: CONCURRENT CONDITIONS

This checklist is provided as an aid to the group leader conducting the discussion of the topics covered in this session. The annotated list consists of the same items that appear on the participants' checklist. Each item is followed by suggested solutions or sources of background information the teacher can use to answer questions, offer ideas to parents, or direct the discussion. Many of the concerns are discussed in detail in the Leader Background Material for session 6. Space has been left for the leader to write down key words and reminders to help with the discussion. Feel free to add anything that is useful in responding to questions and concerns or to note helpful solutions offered by participants in the asthma self-management groups.

Behavior of Child

____ *Child doesn't assume responsibility for attack management; waits to be told what to do.*
Encourage the child to assume responsibility.
Be sure that the child knows steps to take.
Reinforce child for taking proper steps.

____ *Child does not use medications properly during attack.*
Be sure child knows correct method of medication use.
Encourage child when he/she does use them correctly.
Check with physician about questions.

____ *Child does not rest during the attack.*
Be sure child has quiet, interesting things to do while resting.
Allow consequences to occur if child does not rest.

____ *Child does not drink liquids during the attack.*
Find things that the child likes to drink.
Bad breath may be a sign of dehydration.

____ *Child tends to panic during attack.*
Help child keep mind off breathing problems by having fun things for him/her to do.
Do relaxation and breathing exercises together.

____ *Child doesn't know when to ask for help during attack.*
Help child learn early warning signs; reinforce when recognized and acted upon.
Treat early to avoid severe problems.

____ *Child doesn't know what emergency steps to take during attack.*
Discuss steps with child.
Leave completed EMERGENCY SHEET in prominent place.

____ *Difficult for parent to determine if child is actually having attack or just acting.*
Do not encourage child to be sick.
Limit attention during time when child sick.

____ *Other.*

Behavior of Parents

____ *Adults disagree on procedures to follow during attack.*
Discuss procedures with physician.
Agree ahead of time what procedures to follow.

____ *One parent does not involve him/herself with the attack management.*
Advise parents to discuss feelings, concerns among themselves.
Seek counseling help if needed.

____ *Adults tend to argue during attack.*

____ *Adults tend to panic or get overly excited during attack.*
Have plan of action to follow.

____ *Adults do not allow child to be responsible for attack management.*
Children who are away from mom and home frequently handle attacks well; give them the chance to do it all the time.

____ *Other.*

Behavior of Siblings

____ *Siblings do not know what emergency steps to take during attack.*
Discuss; post plan; have them help when parents are present.

____ *Siblings do not understand what is happening during attack.*
Discuss; give them ways to be involved.

____ *Siblings do not stay calm during attack.*
Make sure they understand what is happening; give them attention at other times.

____ *Siblings interfere during attack.*
Make sure they understand what is happening; give them attention at other times.

____ *Other.*

Behavior of Teachers and School Personnel

____ *Teachers and school personnel unaware of basic asthma facts.*
Send ASTHMA INFORMATION SHEET and pamphlets. Send items from the NHLBI Reading and Resource List.

____ *Teachers and school personnel unwilling to cooperate regarding asthma treatment.*
Educate with above.
Talk.

____ *Teachers and school personnel unfamiliar with steps to take during attack.*
Talk. Approach as problem solving, looking for ways to find solutions.
Educate with ASTHMA INFORMATION SHEET.
Discuss situation.

____ *Teachers and school personnel unsympathetic about missed school work.*
Have child make arrangements for makeup work, homework, etc.
Intervene as needed.
Be sure asthma under control as much as possible.

____ *Child with asthma treated differently: overprotected, pushed too hard, condition ignored and denied.*
Educate with facts.

____ *Teachers and school personnel unwilling to make effort to help child's classmates understand and be supportive of asthma situation.*
Don't push understanding or support. Suggest a good general health education program to teacher, nurse, etc. Don't single out asthma.

____ *Other.*

Behavior of Medical Personnel

____ *Medical personnel unaware of how to manage child's asthma attack, especially in emergency situations.*
Have treatment summaries available.
Calmly state what has worked previously in similar situations.

____ *Medical personnel do not respond to attack with a sense of urgency.*
Calmly state that you know how your child reacts.
Be careful that you are not upsetting the child with your panic.
Change doctors if problem continues.

____ *Medical personnel do not ask for pertinent information during attack.*
Calmly give them pertinent information.

____ *Medical personnel not receptive to useful information you provide.*
All you can do is try.
Calmly and assertively tell them you can provide useful information for them.

____ *Child's doctor difficult to locate during attack.*
Talk with him/her about the problem at a time when your child is NOT having the problem.
Make sure you understand the procedure to get in touch with him/her.

____ *Other.*

Other

____ *Other concerns about asthma not discussed.*

LEADING QUESTIONS FOR DISCUSSION OF CONCURRENT CONDITIONS CHECKLIST—SESSION 6

Behavior of the Child

Child does not assume responsibility for managing own attacks; he/she always waits to be told what to do.

Do you know the reason why your child does not manage his/her own attacks?
Can you work with this to change the situation?
Is it because the child is not given the opportunity to be independent?
Is it because the child does not know what to do?
Is it because the parents always rush in at the first step?
Is it because the child does not know what to do or what medicines to take? If yes, then parents must instruct the child.
Is the child aware of early signs and does he/she know when to act on them?
Is the child scared of the attack and does not take steps because he/she denies the situation to himself/herself?

Child does not use medications properly during an attack.

Does the child know how to use the medicines?
If not, can you or a nurse explain this to the child?
Is it because the medicines are not readily available and the child does not have access to them?
Must the child waste time looking for the medicines during an attack?
Does the child panic and therefore not think clearly or work calmly to use the medicines?
Does the child know the importance of taking the right medicines at the right time?

Child does not rest during an attack.

Is the child usually doing something else that he/she does not want to stop doing?
Does the child not want to draw attention to himself/herself by stopping the activity?
Is the child embarrassed in front of friends?
Is the child unaware of the early stages of an attack and does he/she wait too long?
Does the child know the importance of acting on early signs?

Child does not drink liquids during an attack.

Are liquids not available?
Does the child know to drink liquids?
Are available liquids not good tasting?
Do you have any good ideas for types of liquids to use?

Child tends to panic during an attack.

Do other people around the child panic?
Does the child know what to do? Knowing what to do avoids panic.
Do others know what to do?

Does the child and family know how to do relaxation exercises and belly breathing?
Does the child know the importance of relaxation?

Child doesn't know when to ask for help during an attack.

Does the child know at what point he/she should ask for help?
Have you talked to your child about this?
Does the child fear the response of his/her parents?
Does the child want to avert a scolding for failing to avoid a trigger?
Does your child know it is OK to ask for help and that you will not yell, blame, or get excited if he/she does ask for help?
Does the child know that it is OK if there are times when he/she cannot handle the attack entirely on his/her own?
Does the child realize that as he/she gains more experience in judging and managing an attack, he/she will feel better about the experience and not have to ask as often? However, the child will be more sure about the need for help when he/she does ask for it.

Child does not know what emergency steps to take during an attack.

Are the emergency phone numbers written in a specific place?
Are the contact phone numbers for parents or other caretaker adults written for the child in all cases?
Does the child know the 911 code number or whatever number is used in your town or city?
Have you sat down with your child and told him/her what to do in an emergency?
Have you drawn a map of the route to the hospital for your child?
If child is camping or otherwise in another area, does he/she know the closest hospital?

It is difficult for the parent to determine if the child is actually having an attack or is just faking.

If the child is doing it for attention, just deal with the attack and get on with it. Do not give extra attention for being sick. Give the child more attention when he/she is well.
Parents are often worried about this possibility but usually this does not happen.

Behavior of the Parents

Adults disagree on procedures to follow during an attack.

Do you have a plan to follow?
Have you discussed a specific plan and the duties of each person in the plan at a time when the child is not sick? This helps to avoid discord when an attack occurs and everyone knows what to do.
Do you keep records of what worked in the past?

One parent is more involved in helping to manage the attack than the other.

Does one parent work? Do both parents work?
Does one parent not know what to do?
Have the parents talked to each other about this? Ideally, at least part of the involvement should be shared, but the exact arrangements have to be worked out between the parents.

Adults tend to argue during an attack.

Are there other underlying problems to work out?
Have parents talked to each other about this at a time when the child is not having an attack?
The leader cannot fix these situations. Parents merely have to recognize that there is a problem and work it out between themselves.

Adults tend to panic or get over excited during an attack.

Do they know about relaxation exercises?
Do they know the steps in attack management?
Are there other problems to work out?
Is panic a habit?
Do they try to help each other stay calm?
Does the child panic also?

Adults do not allow the child to be responsible for his/her attack even though the child is capable.

Are the parents merely afraid?
Do parents try to do things for the child to diminish their own fears?
Do parents understand that the child *needs* to be able to handle things on his/her own?
Do parents understand that, in the long run, the child will have to be able to act independently in managing an attack?
Do parents understand that they can always step in later to help if they are needed but that they should step back for a while?

Behavior of Siblings

Siblings do not know what emergency steps to take during an attack.

Have they been educated about the steps?
Can they review the emergency sheet?

Siblings do not understand what is happening during an asthma attack.

Did they look at any materials from the children's sessions?
Have parents explained what is happening or what can be done?
Have siblings attended some of the sessions for children?

Siblings do not stay calm during an attack.

Do other persons around them panic?
Is it because they fear they caused it?

Do they understand what is happening?
Do they know about relaxation exercises?

Siblings interfere during an attack.

Do they feel left out and therefore try to get attention?
Are they being totally ignored at the time?
Can they be given extra attention at some other time?
Do you have a plan and a part for them to play in it?

Siblings are not supportive during an attack.

Do they feel they are in the way?
Do they feel left out?
Can they be given attention at some other time?
Do they know what to do?
Do you have a way for them to help that you have discussed with them?

Behavior of Teachers and School Personnel

Teachers and school personnel are unaware of basic asthma facts.

Does the teacher know your child has asthma?
Have you had conferences in which you explain these facts?
Do you bring literature from health organizations such as the American Lung Association?

Lack of cooperation regarding asthma maintenance and treatment.

Does the school have a rule that does not allow children to carry medicines on their person?
Does the teacher not trust the child?
Have you spoken with the teacher and told him/her that your child can be trusted with medications and that he/she knows when to use them?
Are there ways to work within the system?
Have you explored creative solutions with the school nurse?
Can the medication schedule be readjusted so the medicines do not have to be taken during the school hours?

Unfamiliar with steps to take during attack.

Have you informed the teacher and the school?
Have you given them a copy of the emergency sheet?

Problems because of missed school

Does the teacher know about the nature of asthma?
Can you ask for homework to be sent home?
Can you go to school to pick up missed assignments?
Can kids stay after school in days that they are well to make up work?
Can a tutor come to the home?
What have parents in the group done to deal with the situation?

Child with asthma is treated differently, for example, is over protected, pushed too hard, asthma is ignored or denied.

Have parents talked to the teacher (usually a gym teacher) about this?
Does the teacher understand that:
  The child knows when he/she feels an attack coming on.
  The child knows his/her own limits for exercise.
  The child can handle an attack and control the asthma on his/her own.
  It is good for the child with asthma to have exercise when they are feeling well.
Do parents realize that the gym teacher's pushing too hard often comes from the teacher not believing that asthma is a problem in the first place?
Have you tried a note from the doctor?

Teacher does not help the child's classmates to understand and be supportive of the asthma situation.

Have you ever thought of having the Lung Association do a program on asthma?
Can your child do a presentation so the class will understand?
Does the teacher understand? Often the class will react as the teacher does.

Behavior of Medical Personnel

Medical personnel are unaware of how to manage the child's asthma, especially in emergency situations.

If it is your own doctor, have you thought of changing doctors?
If it is in the emergency room in the hospital, are they aware of what has worked in the past?
Do you keep records of treatment and medicines that have and have not worked?

Emergency medical personnel do not respond to an attack with a sense of urgency.

Have you been assertive?
Do you let them know that your child must be seen immediately?

Medical personnel do not ask for pertinent information during an attack.

Do you tell them specific things?
Do you tell them the late signs you have observed, the medications that have already been given, the things that worked, the measures that had no effect, how much the attack has worsened?

Child's doctor is difficult to locate during an attack.

Do you have an alternate physician or has your doctor designated one?
Has the doctor given you steps to take if you cannot reach him/her immediately? For example, have you been told to increase the medicine, go to the emergency room, do other things?

Introduction for the Leader

Discussion of the flow charts presented in this session builds on that of the previous session. They can be used during or after discussion of the Concurrent Conditions Checklist. Participants should have mastered the concept of behavioral analysis and devising skills to alter behavior in a positive manner. Be sure to allow adequate time for a discussion of the items on the Concurrent Conditions Checklist. Once having offered solutions to these problems, integrating the solutions into the flow charts will be facilitated. Flow charts can be used as a means of varying or stimulating discussion of checklist items.

Script for Leading Discussion

comparison of behavior chains

Last week we discussed the behavioral chain flow chart and its use to analyze behavior. Today we'll go a step further and use a double chain flow chart.

Hand out Flow chart 11.

Here, two chains are depicted side by side. The advantage of this chart is that you can compare appropriate and inappropriate ways of responding to an attack. Such is depicted in flow chart 8.

appropriate and inappropriate attack management steps

Hand out Flow chart 12.

In the chain on the left, I have listed steps that might be involved in the early awareness and treatment of an attack. With onset of asthma, the youngster relaxes and drinks warm liquids. After a period, he takes appropriate medications. While waiting to see if the medications will alleviate the child's symptoms, his family is becoming organized for other steps. For example, the youngster's mother may be comforting and observing her son, while his father arranges for a babysitter for other children in the family in the event the child requires hospitalization. Parents contact their physician who prescribes additional treatment to be administered. As noted in the final link in the chain, the attack is aborted.

Now compare the chain on the left with the chain on the right. Here, the incipient attack worsens because treatment has not been initiated. Then, instead of administering available treatment, the youngster's parents start to argue over how the episode might be treated. Perhaps the mother wants to follow instructions provided by the youngster's physician; her husband may argue that asthma is not serious and will go away on its own accord. In the meantime, the attack continues to worsen. Finally, the youngster's parents initiate treatment by giving medications to the youngster. As noted, however, they have failed to keep an adequate supply of the medications on hand; thus, their treatment is ineffective. The final link in the chain depicts the outcome of this attack: the child is rushed to a hospital emergency room with a severe asthma attack. Placing the two chains of responses side by side shows proper and improper ways of treating an attack.

child's response to attacks

Hand out Flow chart 13.

Chart 13 depicts appropriate versus inappropriate ways for an asthmatic child to respond to attacks. In the chain on the left, the youngster responds in an appropriate way by seeking help when necessary, remaining calm, drinking enough liquid each day so as not to become dehydrated, performing steps to abort an attack, and so on. The chain on the right shows what can occur when a child behaves inappropriately to an asthmatic episode. As noted, the youngster does not seek necessary help, he panics, he does not perform steps required to abort an attack, and so on. In short, while one child makes a major contribution to the management of his asthma, the other youngster does not.

examples: response of parents and siblings

Hand out Flow charts 14, 15, 16.

class activity

Let's think back to the earlier part of this session when we discussed concurrent conditions of asthma and came up with solutions to the problems they present. Flow charts 14 through 16 illustrate various ways parents, siblings, or families can respond to asthma. Only inappropriate behaviors are depicted in the left chains of these tables. Your task is to analyze these behaviors for parents, siblings, or families to perform in the event of an attack. This exercise will not only permit you to think of appropriate ways for family members to respond to asthma, but to consider which behaviors should occur first, which second, etc. Completion of the exercise should also provide you with a detailed view of the sequences of behavior which should occur during an asthma attack. Thus, the next time your child suffers asthma, you can treat the episode by systematically following a sequential approach.

discussion

Allow time for class discussion of appropriate behavior sequences.

problem-solving flow charts

Now let's look again at our problem-solving flow chart.

Hand out Flow chart 7.

This week we'll use it to expand our discussion of concurrent conditions. We'll use the flow charts to analyze the steps that are used in managing attacks and apply what we've learned about behavioral techniques.

examples

Hand out Flow charts 17, 18, 19.

You may not want to use them all if the session becomes too long. Choose the items the class has indicated are pertinent.

These flow charts begin by asking questions concerning how the child with asthma and members of this family respond to attacks. If the questions are answered in the affirmative, then reinforcing, positive action should be taken; if, however, there is a negative answer to the question, you should follow the additional advice given to remedy the matter. The final question asks again whether there have been positive behavioral changes. If you can truthfully answer yes, then you should reinforce yourself or your child. If you again answer no, then you should move on to initiate the other action suggested. These flow charts differ from the behavioral chains in that you must make a decision before altering action and initiating further intervention.

Our discussion earlier in this session of concurrent conditions will help you understand these flow charts.

Reproduce Chart 17 on the board or flipchart.

Does child know when to ask for help?

Chart 17 asks whether your child knows when to ask for help during an attack. Does anyone have this problem? How would you go about your behavioral analysis? What steps would you initiate for a behavior change program?

Permit class discussion.

Youngsters don't always need to ask for help. There are many children who do an excellent job of managing their asthma. Their requests for help come when they realize they have done all they can do for themselves and they need additional assistance from their parents or physician. Other children, on the other hand, may lack skills in self-management. They probably require help earlier during the course of attack. The key to answering the question in number 17 is the level of skill your child with asthma has in managing the condition. If your child is skilled, he/she may rarely require help (although he/she should not hesitate to ask for such assistance should he/she decide it necessary). Teaching self-management skills to asthmatic children is also the solution required in order to answer yes to the questions presented in flow chart 18.

Does child take medicine properly during attacks?

Flow chart 19 is concerned with whether your child knows how to take medicine properly during attacks. Is this a problem in your household? How would you go about your behavioral analysis? What steps would you initiate for a behavior change program?

Permit class discussion.

There are a number of youngsters who never learn proper ways of using nebulizers or other ways of taking medicine. Consequently, medicine is not as effective as it should be and additional medications are given. If you answer no to the initial question, begin to observe your child taking medicine. You may ask your physician for additional instruction, particularly if you find that medications are not as effective as you think they should be. This additional analysis of medicine taking should eventually result in better treatment for your child during asthmatic episodes.

Hand out blank flow charts and have class fill them in as you discuss the following questions with class participants:

1. **Does child remain calm during attacks?**
2. **Does child assume major responsibility for asthma?**
3. **Do parents perform appropriate steps to abort an attack in child?**
4. **Does either parent panic during attacks?**
5. **Do parents share responsibility for managing child's asthma?**
6. **Do siblings assist patient during an attack?**
7. **Do medical personnel manage child's attacks in appropriate manner?**
8. **Do teachers respond in appropriate manner to child's attacks?**

The following dialogue is provided to help you lead the discussion and help participants come up with solutions to problems, ways of altering situations, and ways for analyzing causes for behavior.

You may find it helpful to reproduce flow charts on a flipchart or board and write in class responses.

If you find that class time is too limited to permit discussion of all questions, suggest participants take home blank flow charts, fill in as well as they can, and you will continue discussion at next session.

Does the asthmatic youngster remain calm during attacks?

This behavior is necessary, not only to prevent the episode from intensifying, but to properly perform steps required to contain the attack. If you answer yes to the question, please reinforce your child for remaining calm: the youngster has made a significant contribution to the management of his asthma. If you answered no, you may wish to initiate a behavioral analysis to determine exactly what contributes to the child's panic during attacks. If your child finds it difficult to remain calm, you may wish to learn some relaxation exercises to teach your child how to respond in a more appropriate manner. It is not difficult to learn to relax, whether you listen to a relaxation tape or see a professional for such training. Whether what you learn is called systematic relaxation, yoga, or transcendental meditation, the principle underlying all is the same: you induce relaxation according to your own wishes. By doing so, you can learn to relax in the face of stresses created by an asthma attack. If after receiving some training you still see no changes in remaining calm, then additional training is necessary. However, learning to relax is a step that can be acquired by almost all asthmatic children. Thus, you and your child can learn and practice this skill during future attacks.

Does the child assume major responsibility for asthma?

What every physician hopes is that patients learn to accept responsibility for their health. The solution to acquiring confidence in managing asthma rests in acquiring self-management skills. By learning and performing these skills, the child can not only assume the major responsibility for his asthma, but he will wish to do so.

Do parents perform appropriate steps to abort an attack?

Not only should the asthmatic youngster know what steps to take in the event of attack, but so should his parents. If they do not know these steps, they should conduct an analysis of their behavior and then set about to change it. Advice from the child's physician will prove useful in learning management skills.

Does either parent panic during attacks?

It is as important for parents to remain calm during attacks as it is for the youngster. Children model the behavior of others, particularly their parents. If he/she observes mother or father panic during attacks, the child is apt to imitate such behavior during future episodes. Hence, the need for parents to remain calm. If either parent panics during a child's asthmatic episodes, some type of relaxation training should be sought. By doing so, parents can not only learn to be more appropriate models for their child, but they can be more effective in treating the youngster's attacks. Recognition that relaxation is a response pattern, self-induced by the individual, provides many parents with a basic skill for coping with childhood asthma. Continued practice of the skill makes life easier for everyone, child and parents alike.

Do parents share responsibility for their child's asthma?

The successful management of the disorder requires the cooperation of everyone — the child, physicians, and parents. Placing the burden of asthma management upon the shoulders of one individual, usually a youngster's mother, creates considerable family tension and discord. Having a child is a shared responsibility; the care and management of the child requires an equal amount of cooperation. This may take the form of both parents treating the child during attacks or of parents deciding beforehand exactly what each will do in the event of an attack. For example, frequently mothers tend to manage the medical treatment of their children, while fathers attend to other needs with the family, for example, arranging for a babysitter for other children, and making certain the car has gas in the event of a trip to an emergency room. There are many tasks that must be performed during an attack of childhood asthma; cooperation of all family members insures these tasks are properly discharged. Such cooperation can cement relationships between all members of the family, including the time when the asthmatic child is free of attacks.

The remaining questions are concerned with the reactions of others to the management of asthma.

Do siblings assist patient during an attack?

How a child's siblings respond to attacks is important in families. There are many instances when siblings are very helpful to the asthmatic child. They not only attempt to comfort the youngster, but they make an active attempt to abort the attack through such activities as bringing the child liquid. This is the ideal situation: the child's siblings are making a contribution to the management of the asthma. In other families, however, siblings may accuse brothers or sisters of having brought on an attack to get out of chores or they may be jealous of the attention provided the asthmatic child. Such behaviors do not contribute to attack management, let alone the cooperation that should exist in the homes of asthmatic children. A detailed analysis of the activities of everyone in the family should provide information as to which behaviors should be altered. When this knowledge is available, perhaps a family meeting with all members present can establish appropriate ways for everyone in the family to respond during future asthma attacks. Periodic meetings will not only refine roles taken by family members, but serve to reinforce those who do assist the asthmatic child. Asthma affects everyone in the family, not just the child with the disorder. This point must be repeatedly emphasized.

Do medical personnel manage a child's attacks in an appropriate manner?

This is rarely a problem when the youngster is home: his parents have generally found a physician with whom they feel comfortable and who they believe is knowledgeable about childhood asthma. (If this is not the case, then parents may wish to investigate other local physicians. Confidence in the physician is an ingredient in the successful management of childhood asthma. Without this ingredient, it is doubtful self-management skills will ever be successful.) The problem occurs when children either move away from an area or when they are on vacation. At these times, the child and his parents may realize that, during an attack, the episode is treated entirely differently from how attacks are successfully managed at home. When parents or their child lack confidence in how attacks are treated by medical personnel, they may wish to contact their own physician for directions. The latter, in turn, may phone medical personnel at the place where the child is being treated and suggest alternate ways to manage the youngster's asthma. Or, prior to going on a vacation, the parents may wish to obtain a letter from their child's physician detailing how the child's asthma should be treated. This information can then be provided to treating medical personnel in the event of an attack. (Certainly, parents will want to obtain this information from their physician prior to moving.) If there is still no satisfaction with the treatment provided their child, parents can request a visit with the patient representative at a hospital. An advantage of knowing and performing self-management skills is that youngsters may never be in situations where the asthma cannot be quickly and effectively managed. An added benefit is that youngsters and their parents can distinguish good treatment from bad treatment.

Do teachers respond in appropriate manner to child's attacks?

Many teachers know nothing about the nature of asthma or how the disorder is managed. It is suggested you monitor the reaction teachers have towards your child. Some teachers are unwilling to excuse a child with asthma from class to take regularly scheduled medications. Others are unaware of the proper attack management steps to take when a child feels an attack coming on and are reluctant to allow the child to take those steps. Another problem is that physical education teachers may insist your child exercise to the point that asthma is induced. You may wish to discuss these matters with the teachers and the principal of the school. There are a number of aids you can use, ranging from phone calls from your child's physician to educational materials available from such organizations as local chapters of the American Lung Association. As has been the case with many asthmatic children and their families, you may discover there is need for a reciprocal education effort — while educators teach academic subjects to your child, you will need to teach them about asthma.

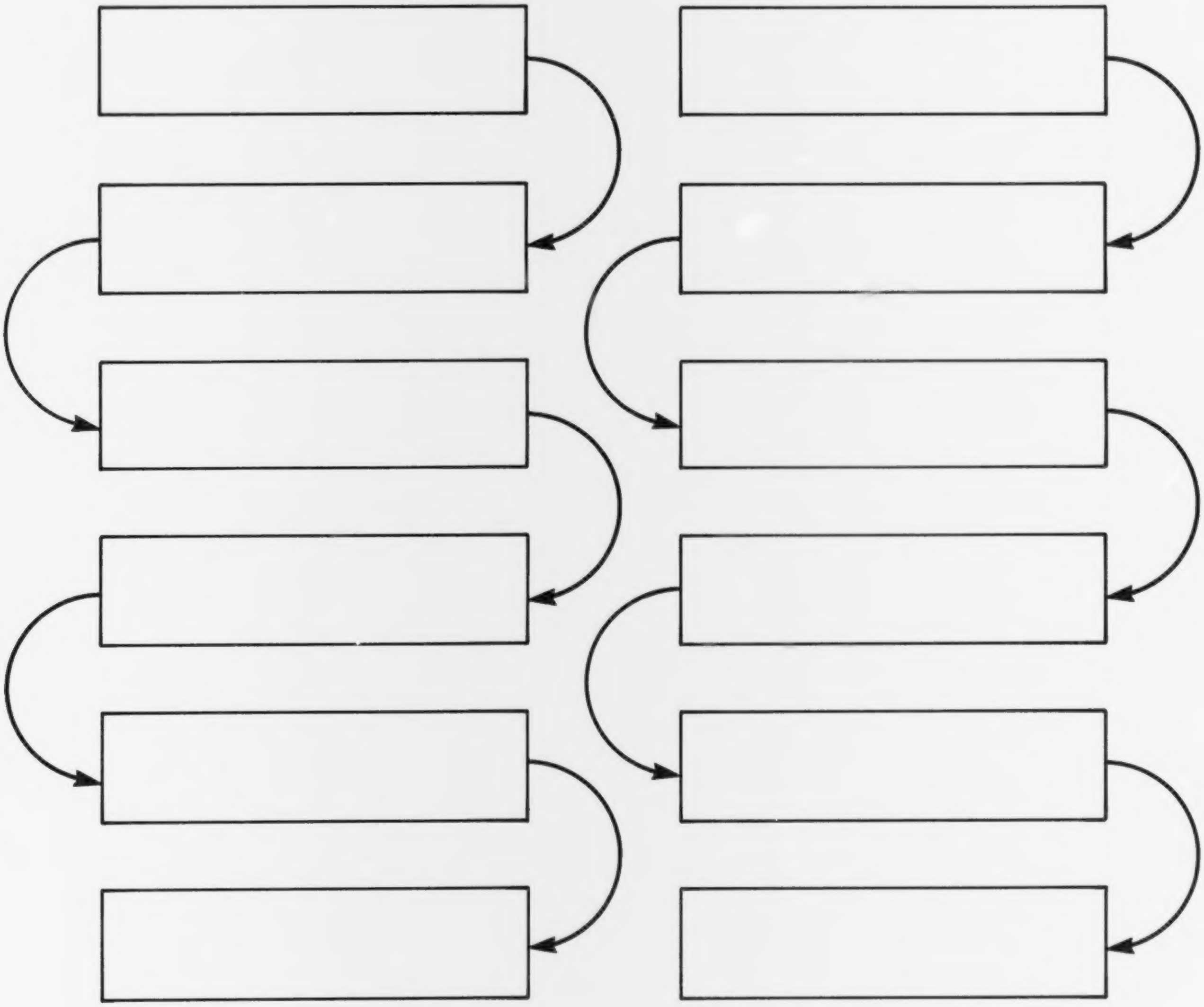
▮ **Let class conclude discussion.**

Hopefully using the flow charts has helped you analyze behaviors surrounding asthma and come up with ways to change those behaviors in such a way that your child's asthma is managed better. Remember that the analysis of behavior involves breaking a behavior down into parts; after this, you can reassemble the parts into some sort of pattern to assist you and your child in the management of asthma. Much of the treatment of asthma should occur in a sequential fashion. Thus, after the initial step in treating an attack, other steps are pursued in some orderly fashion until the episode is under control. It is hoped that by analyzing other behaviors, you can break them into parts and then try to put the parts, like links, into a behavioral chain. This will help you to remember what it is you and your child are supposed to do during an attack, and to establish control over the episode in the most efficient manner.

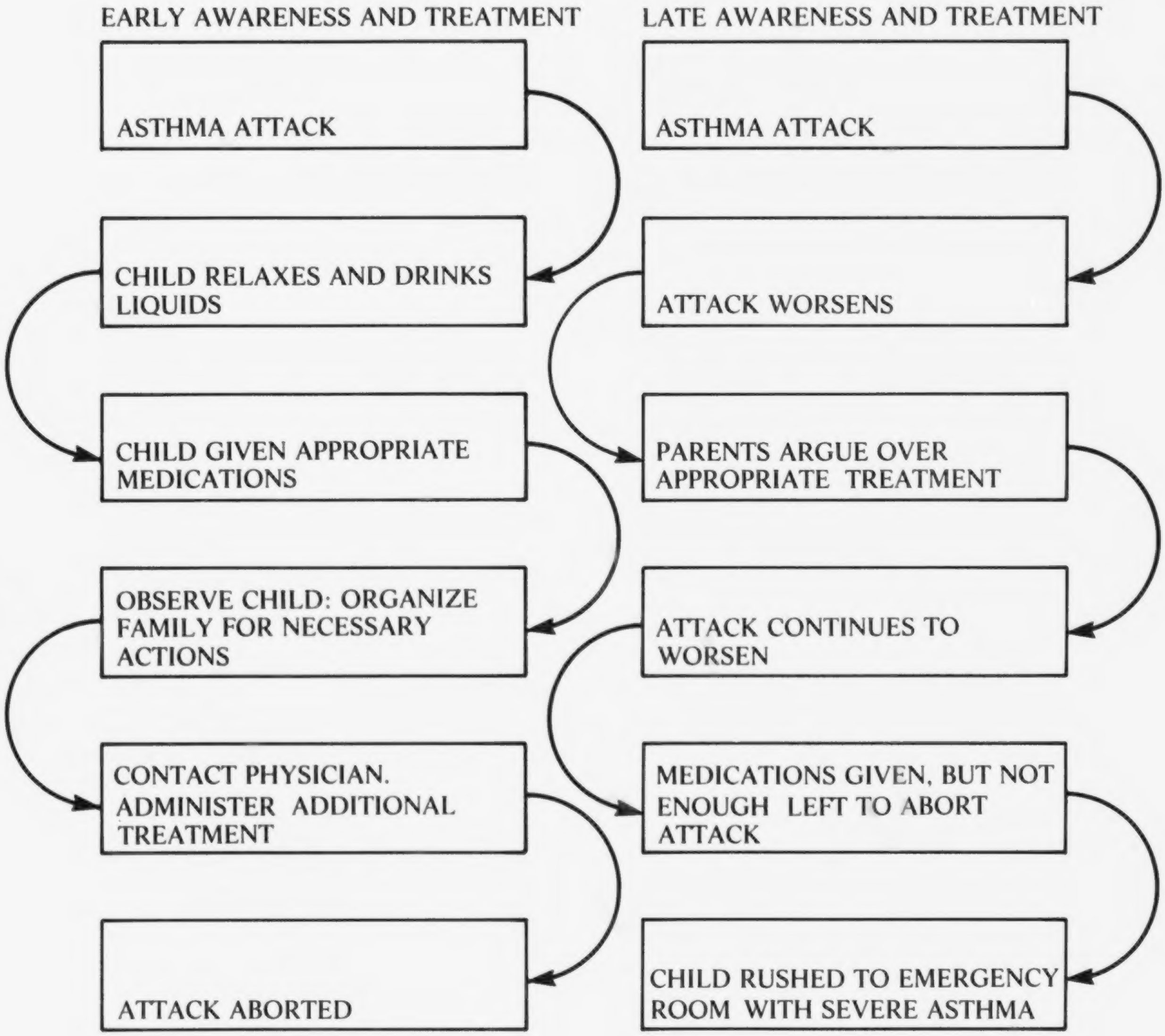
Remember that decisionmaking is an integral part of solving problems. There are many times each day when we are faced with problems. How they will be solved will depend, to a considerable degree, upon the decisions we make. Additional blank flow charts are available for you to take home. I hope you can use these in not only dissecting problems, but in considering the best way to solve them.

▮ **Hand out blank flow charts to those who want them.**

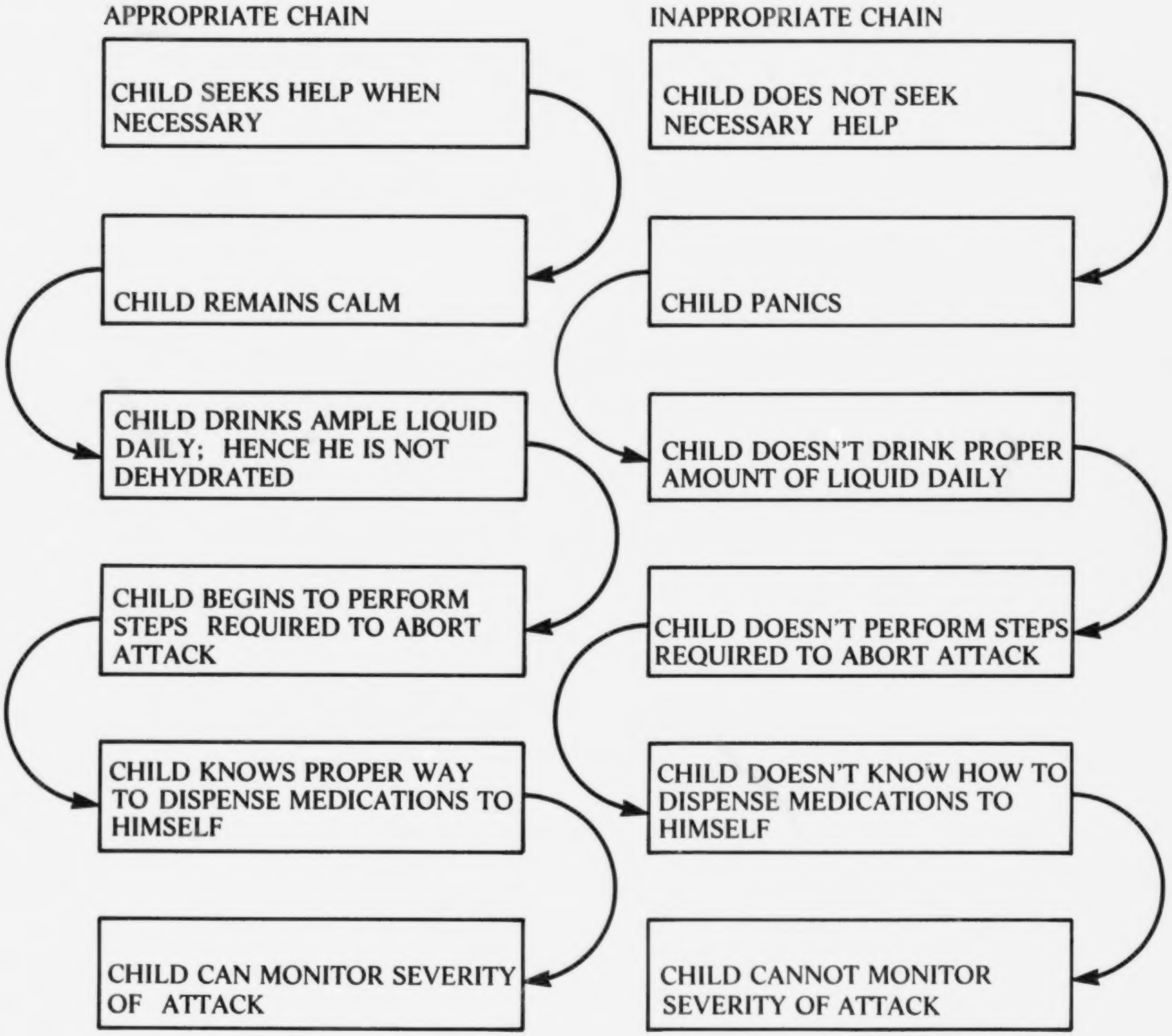
FLOW CHART 11. CHART SHOWING TWO CHAINS OF RESPONSES



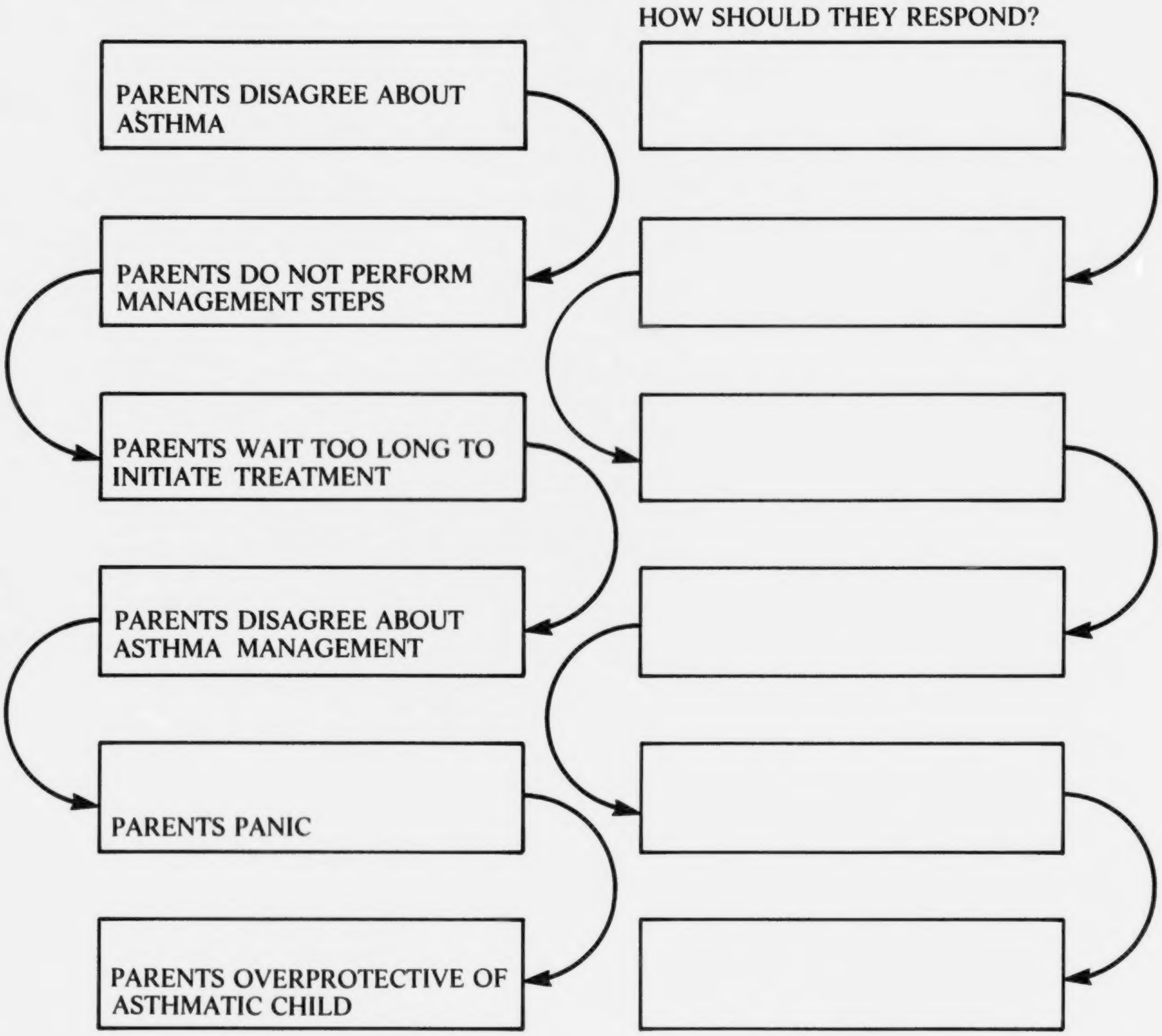
FLOW CHART 12. CHAINS DEPICTING DIFFERENCES IN AWARENESS AND TREATMENT OF AN ASTHMA ATTACK


EARLY AWARENESS AND TREATMENT
ASTHMA ATTACK
CHILD RELAXES AND DRINKS LIQUIDS
CHILD GIVEN APPROPRIATE MEDICATIONS
OBSERVE CHILD: ORGANIZE FAMILY FOR NECESSARY ACTIONS
CONTACT PHYSICIAN. ADMINISTER ADDITIONAL TREATMENT
ATTACK ABORTED
LATE AWARENESS AND TREATMENT
ASTHMA ATTACK
ATTACK WORSENS
PARENTS ARGUE OVER APPROPRIATE TREATMENT
ATTACK CONTINUES TO WORSEN
MEDICATIONS GIVEN, BUT NOT ENOUGH LEFT TO ABORT ATTACK
CHILD RUSHED TO EMERGENCY ROOM WITH SEVERE ASTHMA

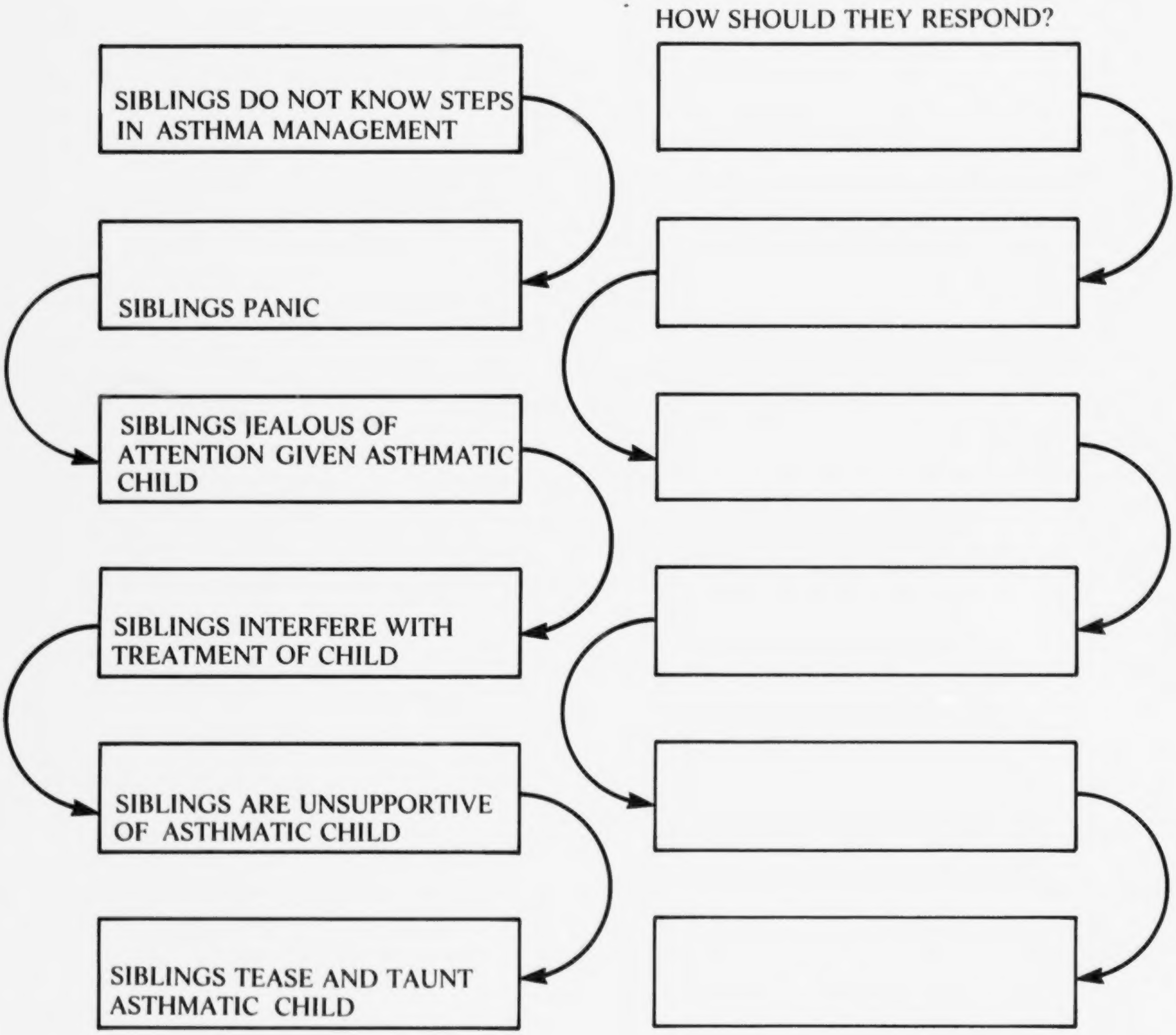
FLOW CHART 13. APPROPRIATE AND INAPPROPRIATE WAYS A CHILD CAN RESPOND TO AN ASTHMA ATTACK


APPROPRIATE CHAIN
CHILD SEEKS HELP WHEN NECESSARY
CHILD REMAINS CALM
CHILD DRINKS AMPLE LIQUID DAILY; HENCE HE IS NOT DEHYDRATED
CHILD BEGINS TO PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD KNOWS PROPER WAY TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CAN MONITOR SEVERITY OF ATTACK
INAPPROPRIATE CHAIN
CHILD DOES NOT SEEK NECESSARY HELP
CHILD PANICS
CHILD DOESN'T DRINK PROPER AMOUNT OF LIQUID DAILY
CHILD DOESN'T PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD DOESN'T KNOW HOW TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CANNOT MONITOR SEVERITY OF ATTACK

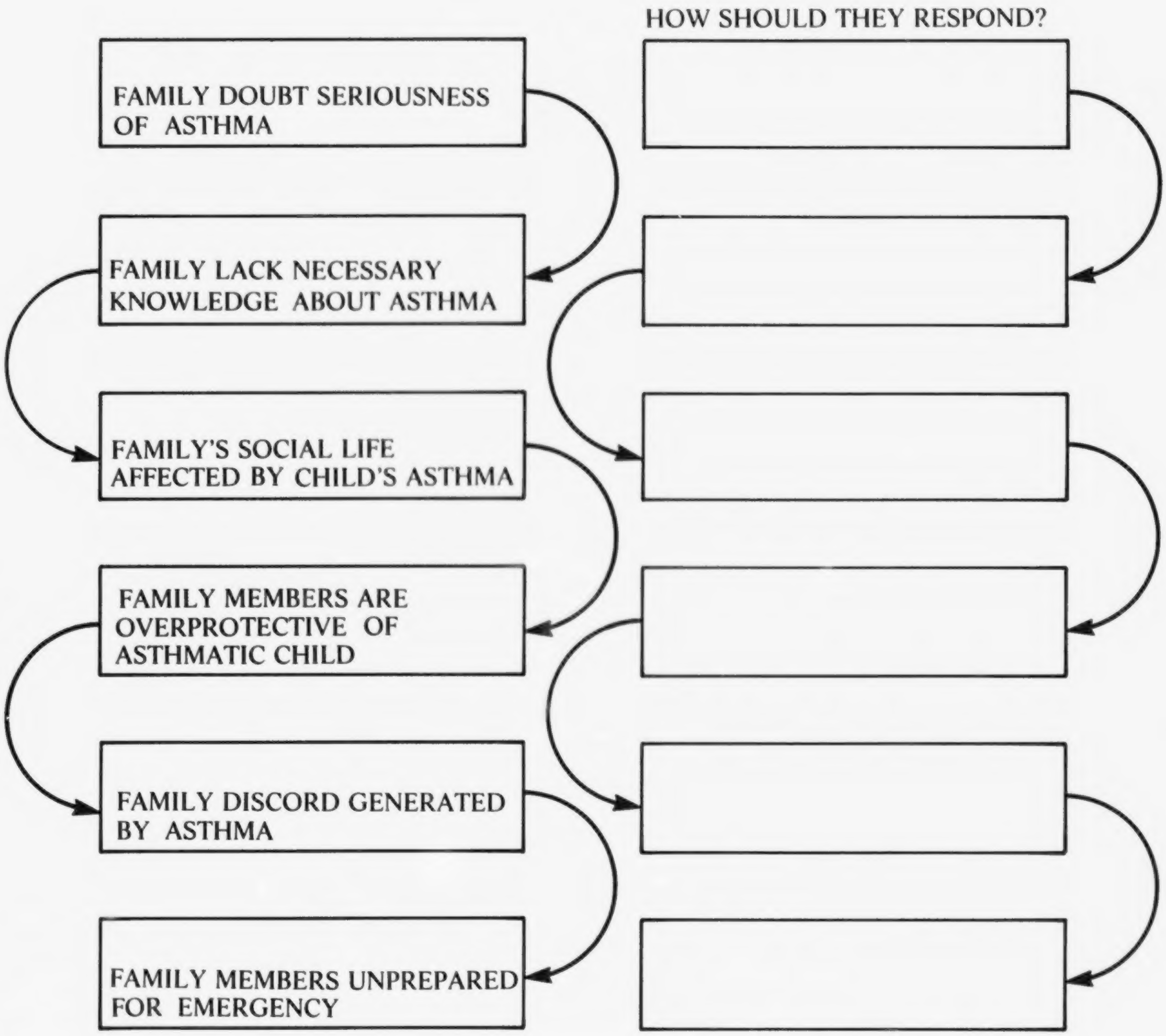
FLOW CHART 14. CHAIN OF INAPPROPRIATE PARENTAL BEHAVIORS MADE IN RESPONSE TO A CHILD'S ASTHMA ATTACK


HOW SHOULD THEY RESPOND?
PARENTS DISAGREE ABOUT ASTHMA
PARENTS DO NOT PERFORM MANAGEMENT STEPS
PARENTS WAIT TOO LONG TO INITIATE TREATMENT
PARENTS DISAGREE ABOUT ASTHMA MANAGEMENT
PARENTS PANIC
PARENTS OVERPROTECTIVE OF ASTHMATIC CHILD

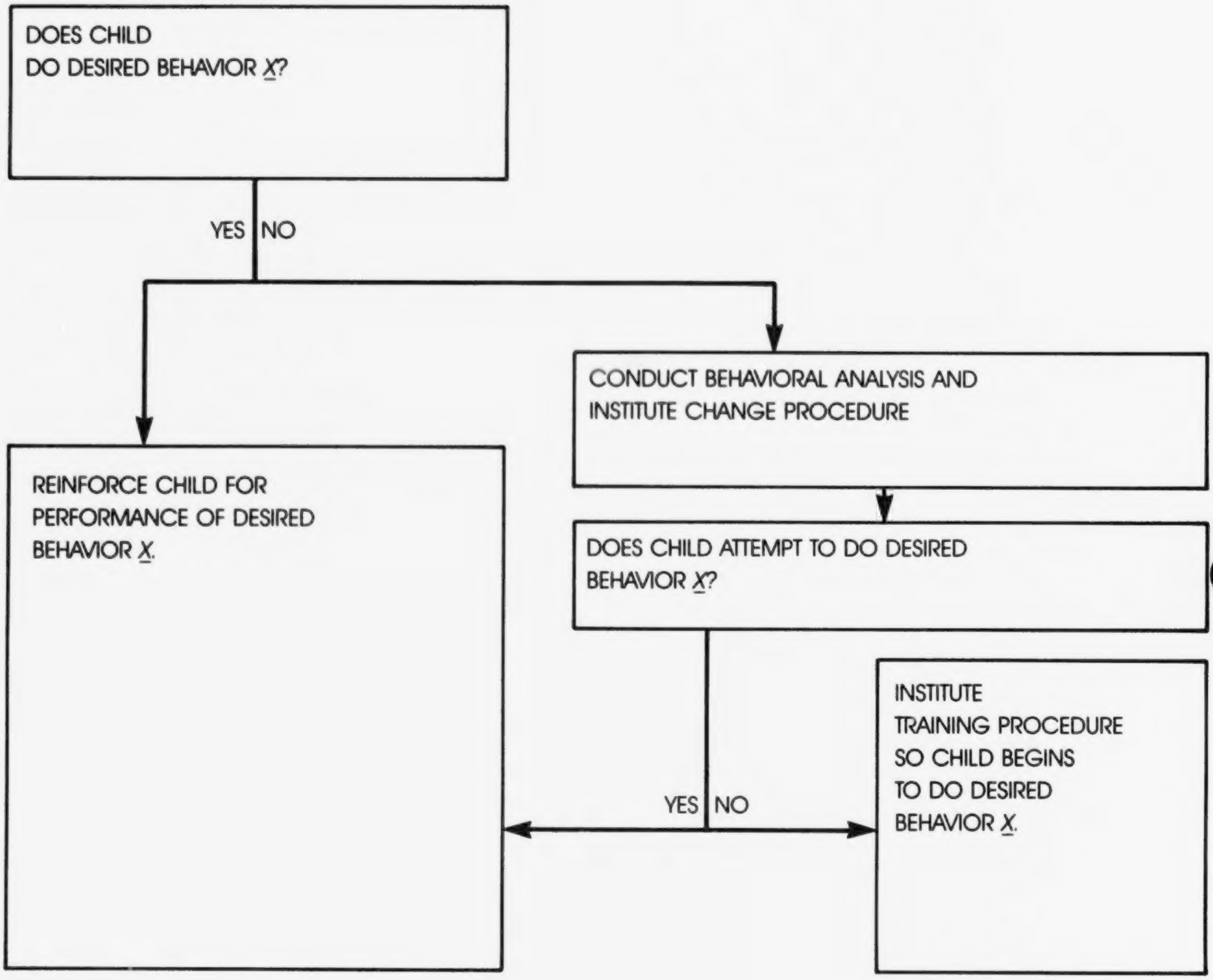
FLOW CHART 15. CHAIN OF INAPPROPRIATE BEHAVIORS BY SIBLINGS TO ATTACK SUFFERED BY BROTHER OR SISTER


HOW SHOULD THEY RESPOND?
SIBLINGS DO NOT KNOW STEPS IN ASTHMA MANAGEMENT
SIBLINGS PANIC
SIBLINGS JEALOUS OF ATTENTION GIVEN ASTHMATIC CHILD
SIBLINGS INTERFERE WITH TREATMENT OF CHILD
SIBLINGS ARE UNSUPPORTIVE OF ASTHMATIC CHILD
SIBLINGS TEASE AND TAUNT ASTHMATIC CHILD

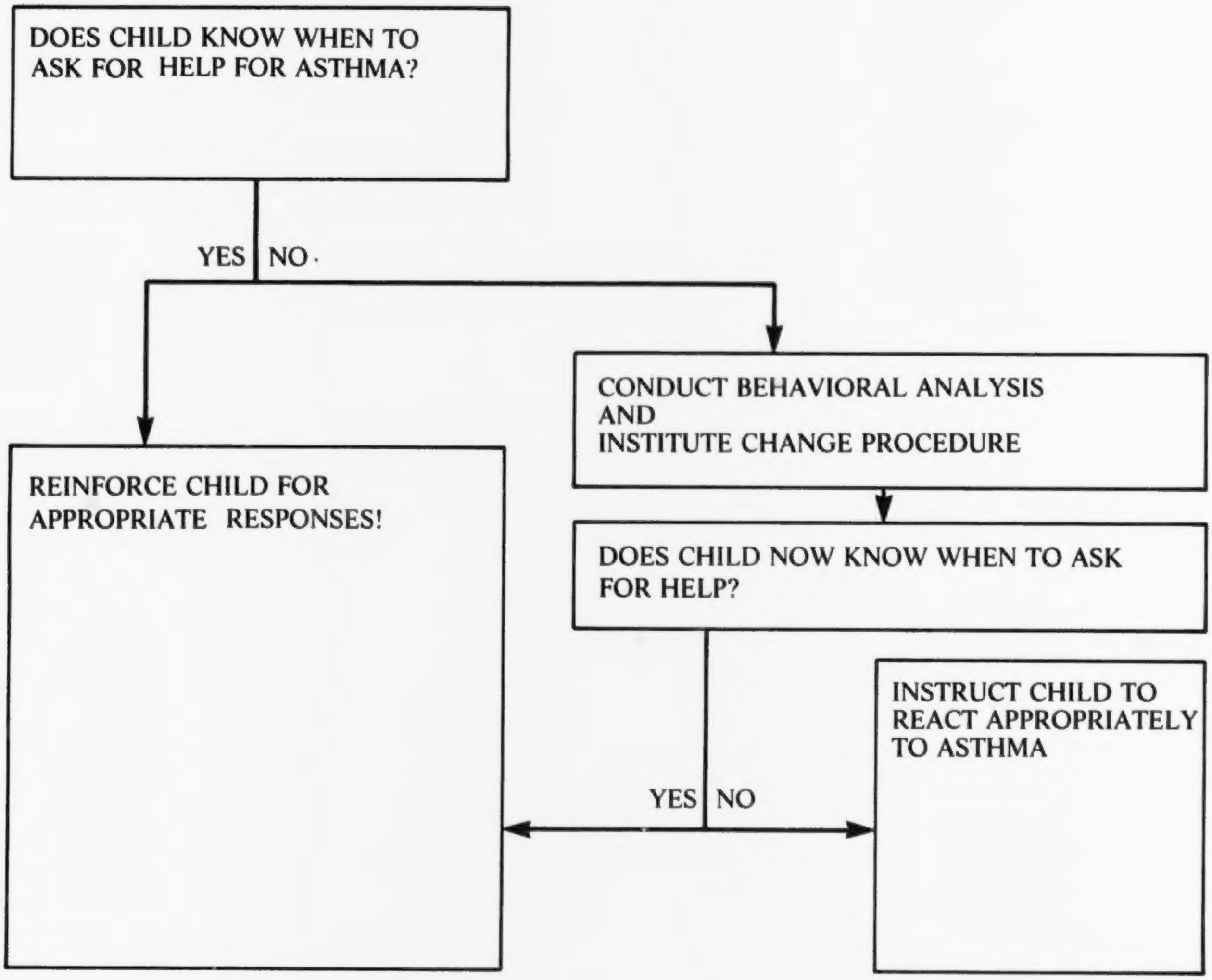
FLOW CHART 16. CHAIN OF INAPPROPRIATE BEHAVIORS BY FAMILY MEMBERS MADE IN RESPONSE TO A CHILD'S ASTHMA ATTACK


HOW SHOULD THEY RESPOND?
FAMILY DOUBT SERIOUSNESS OF ASTHMA
FAMILY LACK NECESSARY KNOWLEDGE ABOUT ASTHMA
FAMILY'S SOCIAL LIFE AFFECTED BY CHILD'S ASTHMA
FAMILY MEMBERS ARE OVERPROTECTIVE OF ASTHMATIC CHILD
FAMILY DISCORD GENERATED BY ASTHMA
FAMILY MEMBERS UNPREPARED FOR EMERGENCY

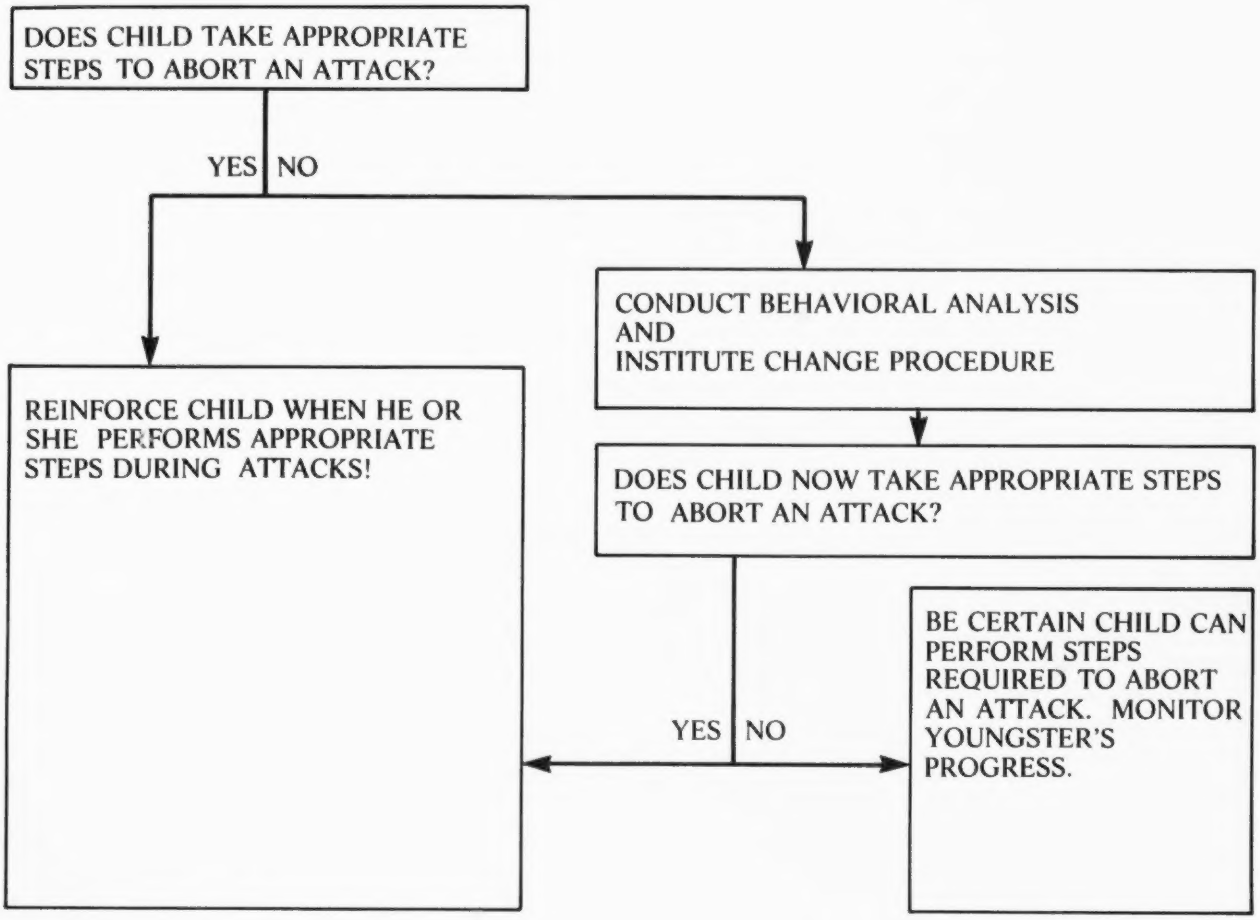
FLOW CHART 7. PROBLEM SOLVING FLOW CHART


DOES CHILD DO DESIRED BEHAVIOR X?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR PERFORMANCE OF DESIRED BEHAVIOR X.
DOES CHILD ATTEMPT TO DO DESIRED BEHAVIOR X?
YES
NO
INSTITUTE TRAINING PROCEDURE SO CHILD BEGINS TO DO DESIRED BEHAVIOR X.

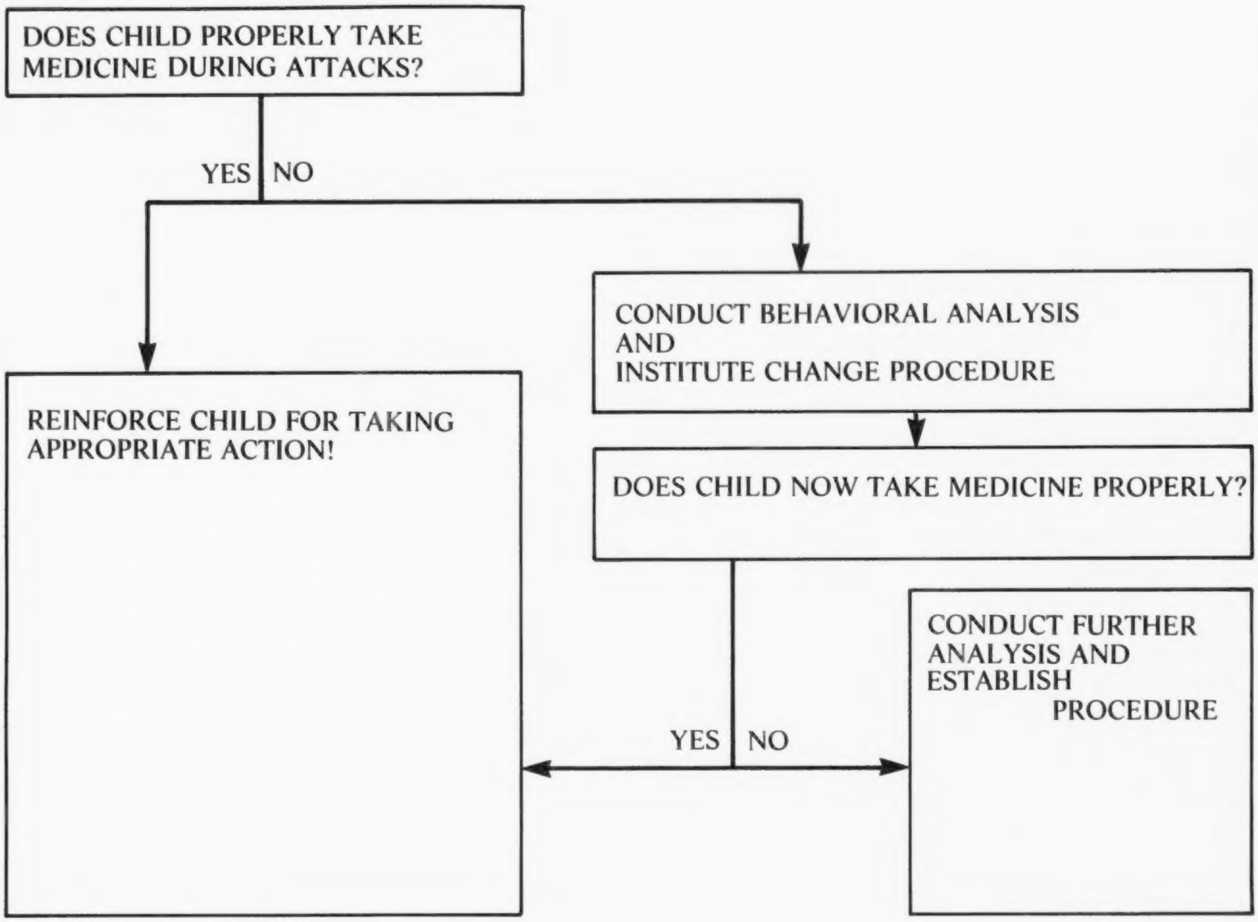
FLOW CHART 17. MANAGING ATTACKS: ASKING FOR APPROPRIATE HELP


DOES CHILD KNOW WHEN TO ASK FOR HELP FOR ASTHMA?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR APPROPRIATE RESPONSES!
DOES CHILD NOW KNOW WHEN TO ASK FOR HELP?
INSTRUCT CHILD TO REACT APPROPRIATELY TO ASTHMA
YES
NO

FLOW CHART 18. MANAGING ATTACKS: TAKING APPROPRIATE STEPS


DOES CHILD TAKE APPROPRIATE STEPS TO ABORT AN ATTACK?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD WHEN HE OR SHE PERFORMS APPROPRIATE STEPS DURING ATTACKS!
DOES CHILD NOW TAKE APPROPRIATE STEPS TO ABORT AN ATTACK?
YES
NO
BE CERTAIN CHILD CAN PERFORM STEPS REQUIRED TO ABORT AN ATTACK. MONITOR YOUNGSTER'S PROGRESS.

FLOW CHART 19. MANAGING ATTACKS: TAKING MEDICINE PROPERLY


DOES CHILD PROPERLY TAKE MEDICINE DURING ATTACKS?
YES
NO
REINFORCE CHILD FOR TAKING APPROPRIATE ACTION!
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
DOES CHILD NOW TAKE MEDICINE PROPERLY?
YES
NO
CONDUCT FURTHER ANALYSIS AND ESTABLISH PROCEDURE

CONCURRENT CONDITIONS CHECKLIST

Directions: Check (√) any area of concern.

Behavior of the Child

____ Child doesn't assume responsibility for managing own attacks; that is, he/she waits to be told what to do
____ Child does not use medications properly during attack
____ Child does not rest during attack
____ Child does not drink liquids during attack
____ Child tends to panic during attack
____ Child doesn't know when to ask for help during attack
____ Child doesn't know what emergency steps to take during attack
____ Difficult for parent to determine if child is actually having attack or just acting
____ Other____

Behavior of Parents

____ Adults disagree on procedures to follow during attack
____ One parent does not involve him/herself with the attack management
____ Adults tend to argue during attack
____ Adults tend to panic or get overexcited during attack
____ Adults do not allow child to be responsible for attack management
____ Other____

Behavior of Siblings

____ Siblings do not know what emergency steps to take during attack
____ Siblings do not understand what is happening during attack
____ Siblings do not stay calm during attack
____ Siblings interfere during attack
____ Siblings not supportive during attack
____ Other____

Behavior of Teachers and School Personnel

____ Teachers and school personnel unaware of basic asthma facts
____ Teachers and school personnel unwilling to cooperate regarding asthma treatment
____ Teachers and school personnel unfamiliar with steps to take during attack
____ Teachers and school personnel unsympathetic about missed school work
____ Teachers and school personnel treat child with asthma differently: overprotected, pushed too hard, condition ignored or denied
____ Teachers and school personnel unwilling to make effort to help child's classmates understand and be supportive of asthma situation
____ Other____

Behavior of Medical Personnel

____ Medical personnel unaware of how to manage child's asthma attack, especially in emergency situations
____ Medical personnel do not respond to attack with sense of urgency
____ Medical personnel do not ask for pertinent information during attack
____ Medical personnel not receptive to useful information you provide
____ Child's doctor difficult to locate during attack
____ Other ____

OTHER

____ Other concerns about asthma not discussed

ASTHMA INFORMATION FOR **SCHOOL PERSONNEL**

Asthma is a chronic lung disease. People with asthma have especially sensitive lungs. When something triggers asthma, the bronchial tubes become smaller and mucus-filled. The person usually experiences a "tight" feeling in the chest, and it becomes hard to move air in and out of the lungs. This breathing difficulty is known as an attack or episode. The frequency and severity of attacks or episodes vary greatly. The longer an attack continues, the harder it is to stop. Therefore, early treatment is vital.

Common triggers that sometimes bring on asthma attacks during school are air pollution, animal dander, wind, changes in the weather, *over*-exercise, and emotions. Asthma can be triggered by emotions but, contrary to a prevailing myth, it is not "all in the head." If an asthma attack is triggered, it is important to allow the child to follow the attack management steps outlined below.

School personnel who understand asthma, its triggers, and its management can help the asthmatic student deal with the condition and de-emphasize its importance in the child's life. Because asthma self-management varies depending on the age of the child and the severity of the condition, teachers and school nurses should know the appropriate responses for individual students. Personal communication with the parents and child will permit school personnel to help the child's self-management efforts. In this way, problems can be handled quickly, allowing the child to concentrate on school rather than his/her illness.

Attack/Episode Management

When a child feels an asthma attack coming on during school, he/she knows to:

1. REST AND RELAX early in the episode.
2. DRINK plenty of warm liquids.
3. Take any MEDICINE as prescribed. (See ASTHMA MEDICATION INFORMATION for medication schedule.)

Many times, by following these simple steps, an attack may be averted. However, if symptoms are not gone in 30 minutes, the teacher should call the parents or the child's doctor. (See phone numbers on ASTHMA MEDICATION INFORMATION.)

Danger Signs

If the child has blue lips or fingernails and is focusing all of his/her attention on breathing, immediate emergency care is needed.

Preventive Measures

1. Encourage the child to follow good general health practices such as getting adequate sleep, eating properly, and exercising regularly.
2. Permit the child to take any regularly prescribed medications on time. It is important that regularly prescribed asthma medication be taken on time to ensure that the proper amount of medication is in the bloodstream at all times.

3. Allow child to avoid triggering factors as much as possible. Be aware of the child's specific triggers.
4. Prevent episodes from lasting by following the attack management steps above.
5. De-emphasize the importance of asthma in the child's life, but be sympathetic and reassure the student that you will help if an attack does occur.

A Note About Asthma Medications

Sometimes an "as needed" or PRN medication is prescribed to help lessen or avert an attack. Many children use these properly.

However, if school personnel suspect that a child is overusing or underusing a PRN medication, they should check with the parents or physician.

ASTHMA **MEDICATION** INFORMATION

Child's Name______________________ Grade__________

Parent's Name______________________ Daytime Phone__________

Physician's Name______________________ Phone__________

Medication Name	**Dosage**	**Times to be Taken in School**

Medications to be used in case of attack:______________________

Directions:______________________

Inhaled Medications:______________________

Directions:______________________

Other:______________________

EMERGENCY SHEET

Emergency Route to Hospital
(Draw Map)

Doctor's Name ______________________ Phone Number ______________

Hospital Name ______________________ Phone Number ______________

Mother's work hours: ______________________ Phone Number ______________

Father's work hours: ______________________ Phone Number ______________

Who else to call 1. ______________________ Relationship 1. ______________

in case of need: 2. ______________________ to child: 2. ______________

Current Medications and Schedule

Name	**Dosage**	**Times Taken**

"As Needed" Medications and Instructions (Include Meds Taken Before Exercise)

Name	**Instructions**

Allergies and Their Consequences

If Slight Wheezing:

1. Give fluids
2. Have child rest and relax
3. Have child take prescribed medication: (Name)__________
   (Dose)__________(Instructions)__________
4. If no change in_____minutes, call___parents or other__________
   (To be filled in by parents)
5. Other special instructions__________

Danger Signs:

General Information:

When to go to the doctor or hospital:__________

Other:__________

ATTACK MANAGEMENT

The time to treat an asthma attack or episode is when the symptoms first appear. These symptoms may include shortness of breath, coughing, a slightly tight feeling in the chest, etc. By "catching" an attack early and treating it quickly, the chances of having a severe attack are greatly reduced. The later an attack is treated, the more difficult it is to restore normal breathing patterns.

Attack Management Steps

Your child should follow these simple and easy steps used by children at the National Asthma Center when he or she suspects that an asthma attack may be coming:

1. Rest and relax
2. Drink warm liquid
3. Use medicines prescribed for attack

1. Rest and Relax. At the first sign of breathing difficulties, the child should STOP and rest. This means sitting down and resting for at least ten minutes. Relaxing may be explained as letting go, getting as comfortable as possible and staying that way for a while. Diaphragmatic breathing or "belly breathing" may help children relax by giving them something concrete to do, and thus help them gain control over their asthma. Children who panic or have a hard time settling down may need to practice progressive relaxation before they can relax during an attack or episode. If the child does panic, progressive relaxation is probably best taught by a professional trained in this technique. Progressive relaxation does not take a long time to learn, but must be practiced to be effective. (See section PRACTICING RELAXATION.)

2. Drink Warm Liquid. It should be taken slowly rather than all at once. Warm liquid is preferred because it helps the bronchial tubes relax. Very cold liquid may actually hinder getting an attack under control. Getting and drinking something warm is a step that a child can do for him or herself. As soon as the child is old enough, sit down and discuss warm things that he or she likes to drink. Make sure there is always a supply of those things and encourage the child to get them for him or herself.

3. Use any Medicines as Prescribed for an Attack. Different types of medicine are used for attacks. Be sure that you understand how to use whatever medicines that your doctor prescribes. Call your doctor if you realize that you need clarification on certain points. (Be sure and read the sections on WHIFFERS, PUFFERS, etc.... and MEDICATIONS FOR ASTHMA.)

Taking Responsibility for Managing an Attack

Management steps #1 and #2 are things that children can do themselves. It is important that children are taught that resting and drinking liquids are things that they can do on their own to help themselves.

Depending upon the age of the child, set up some agreements in your family as to when the child should let you know about his or her breathing difficulty. With an older child, it may be the child's responsibility to take the first two steps, then let you know if no improvement in breathing has been noted after 15 minutes. If the child is very young, you may instruct the child to let you know as soon as he/she realizes there are breathing problems. Then you can provide such prompts as, "I'm glad that you came and told me that you're having a little trouble breathing. What can you do to help your breathing get better?" If the child suggests warm water, or resting, give praise for the child's remembering. Then be sure that the child takes his or her own advice. If the child has forgotten what to do, then remind him or her about the steps and help (but do not do it all yourself) the child take those steps.

And what if the preceding steps don't work? That may happen for a variety of reasons. Later, after the attack is under control, analyze why the attack got worse. Was there anything that you or your child could have done differently that may have kept the attack from worsening? Sometimes you may be able to plan new strategies for dealing with attacks in the future. Sometimes there may not be anything that you or your child could have done differently to gain control of the attack.

When to Call the Doctor

Parents are sometimes reluctant to call the doctor because they don't want to be a "bother." If the child seems to be having a serious asthma attack, some important points to remember are:

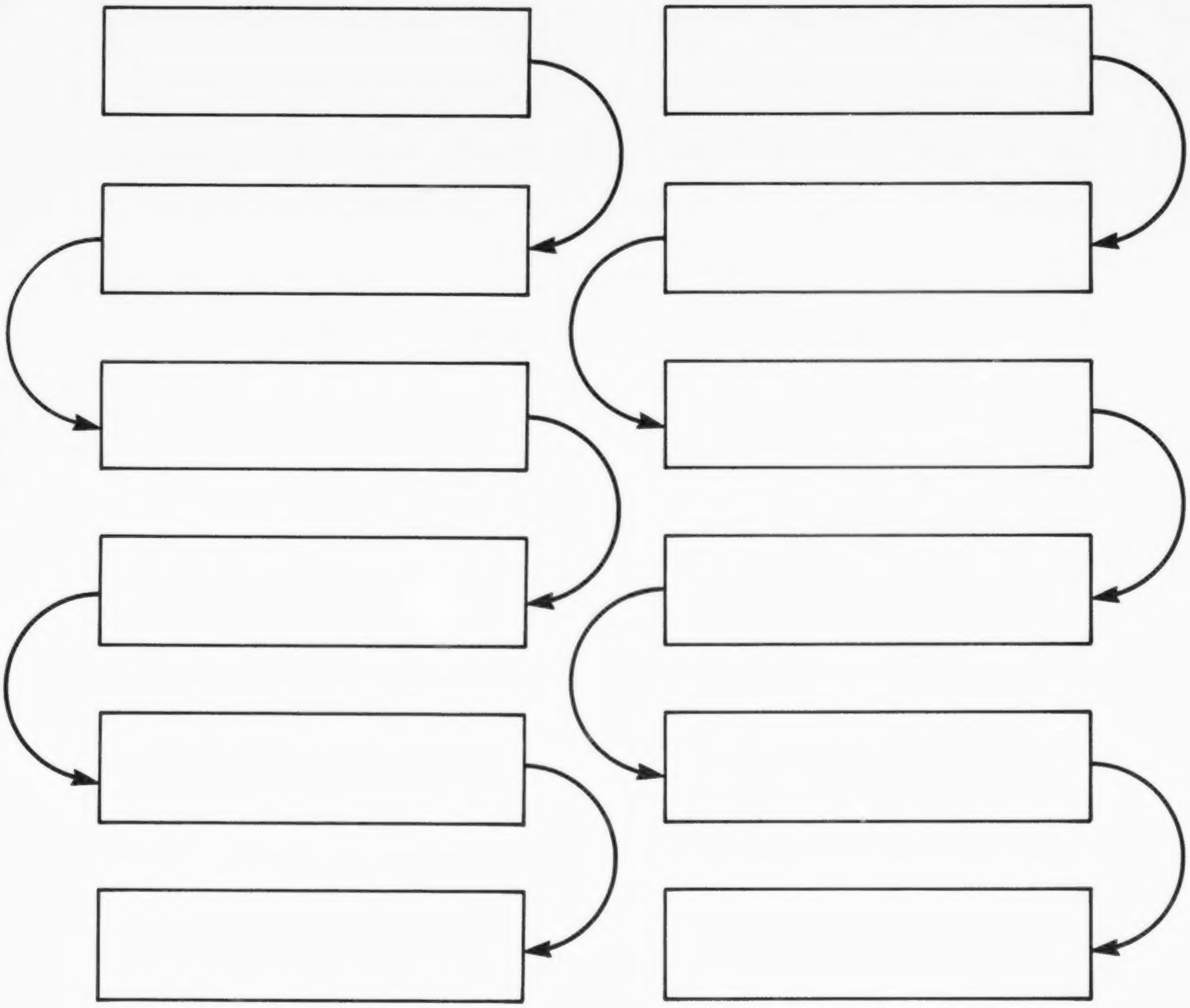
Breath is life. It is nothing to fool around with. If you have any doubts about the severity of an attack, get medical help first. Then ask if you should have brought the child in or should have waited. In this way, you can learn to better judge those things for yourself in the future.

If the child's lips or fingernails are turning blue or if he or she seems to be breathing shallowly and focusing all attention on breathing, get help. You cannot always hear wheezing during a serious attack, so don't rely upon that as a sign. If a child is in trouble and nothing is done to relieve bronchoconstriction, or nothing relieves it, the child will go into *status asthmaticus.* This is a serious attack where conventional asthma treatments do not help. It requires specialized care and attention.

If in doubt, call. Don't wait until the last minute to call. A phone call to your doctor costs next to nothing and could prevent a great deal of worry.

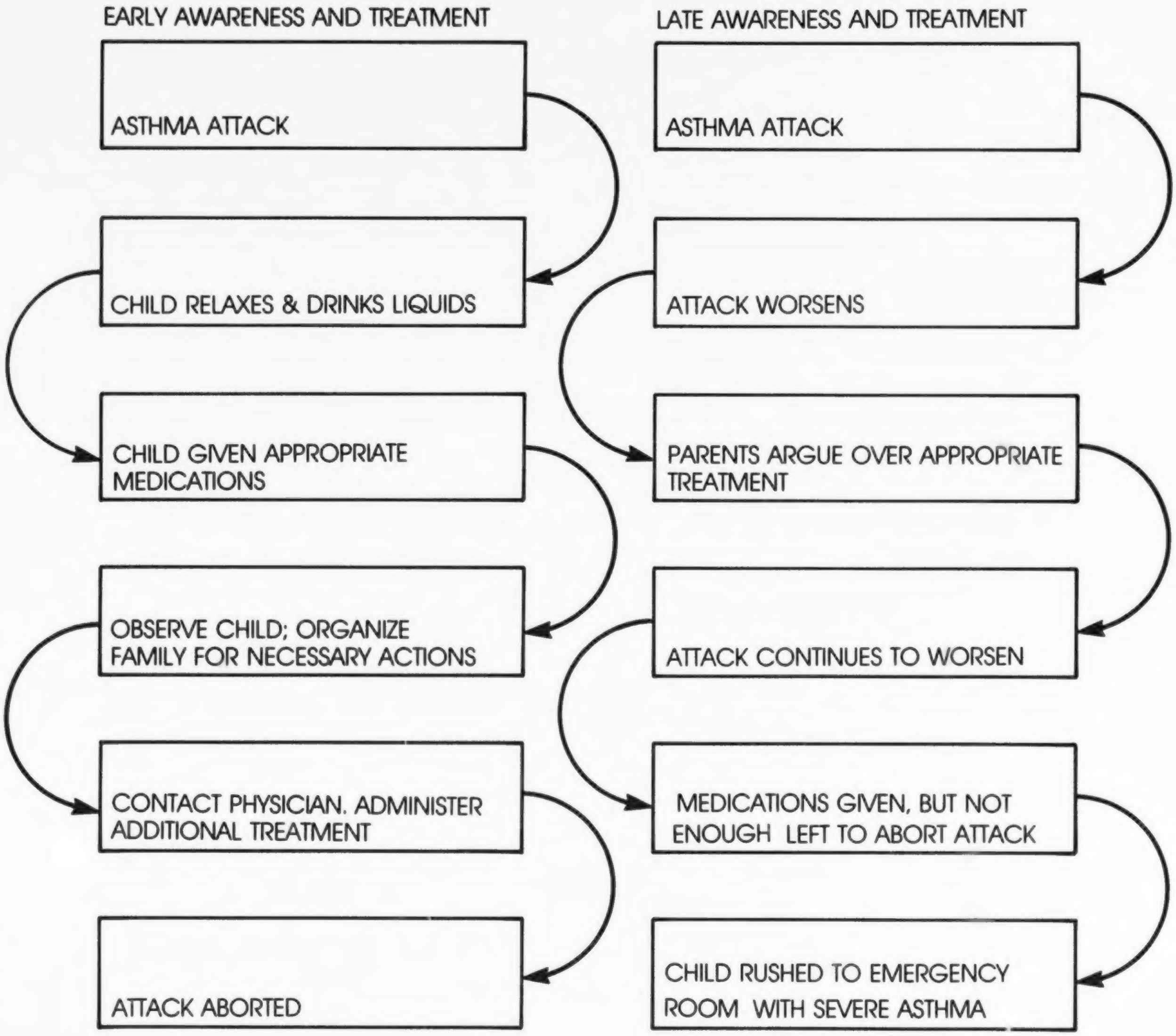
Asthma medications take a varying amount of time to work depending upon the specific kind. Ask your doctor to give you some guidelines about the particular medication that your child is taking. How soon after your child takes the medication should you begin to see it take effect? If it doesn't seem to be taking effect, how long before you can give more?

FLOW CHART 11. **CHART SHOWING TWO CHAINS OF RESPONSES**

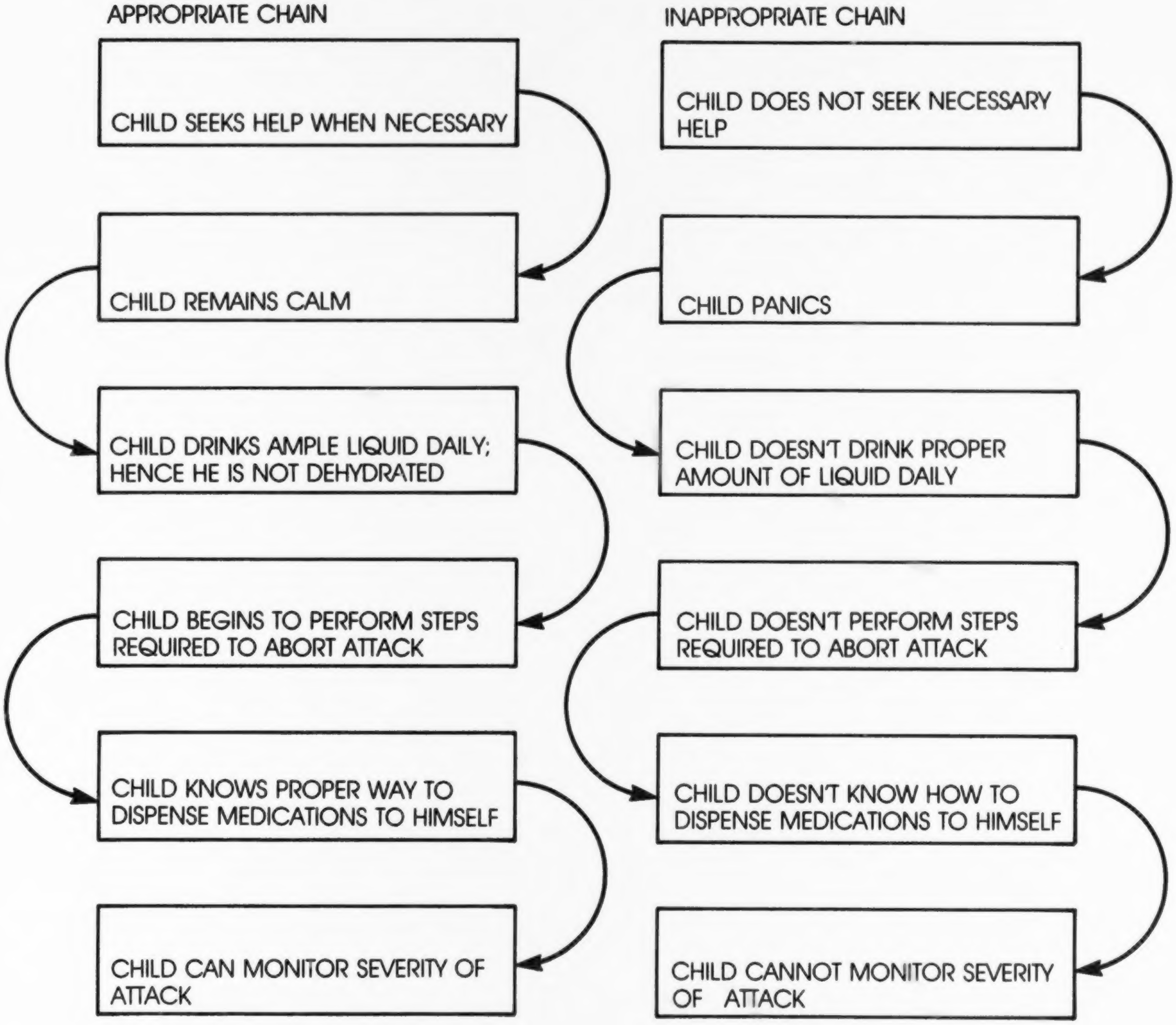


Parent Handout 6-6, p. 1

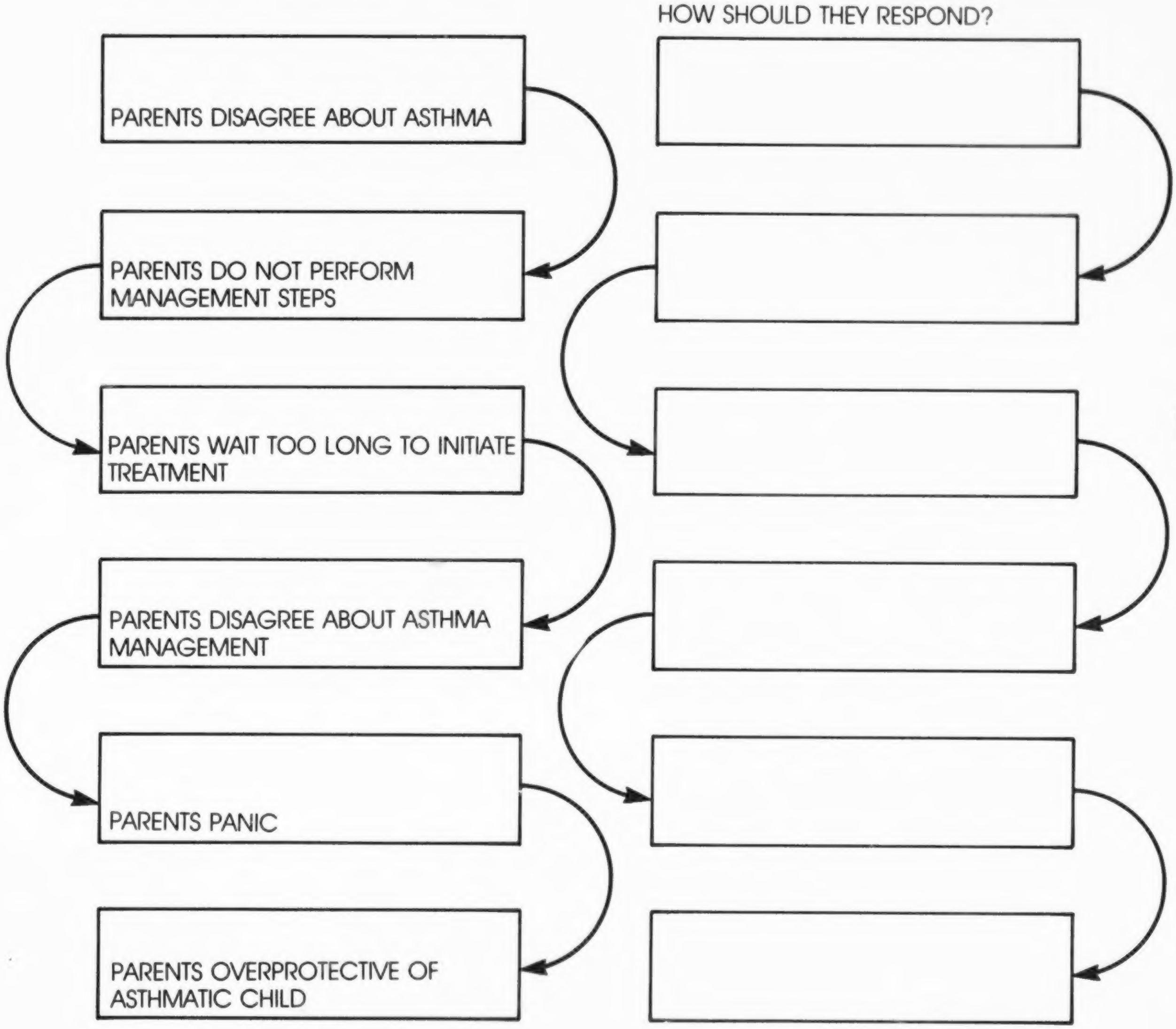
FLOW CHART 12. **CHAINS DEPICTING DIFFERENCES IN AWARENESS AND TREATMENT OF AN ASTHMA ATTACK**


EARLY AWARENESS AND TREATMENT
ASTHMA ATTACK
CHILD RELAXES & DRINKS LIQUIDS
CHILD GIVEN APPROPRIATE MEDICATIONS
OBSERVE CHILD; ORGANIZE FAMILY FOR NECESSARY ACTIONS
CONTACT PHYSICIAN. ADMINISTER ADDITIONAL TREATMENT
ATTACK ABORTED
LATE AWARENESS AND TREATMENT
ASTHMA ATTACK
ATTACK WORSENS
PARENTS ARGUE OVER APPROPRIATE TREATMENT
ATTACK CONTINUES TO WORSEN
MEDICATIONS GIVEN, BUT NOT ENOUGH LEFT TO ABORT ATTACK
CHILD RUSHED TO EMERGENCY ROOM WITH SEVERE ASTHMA

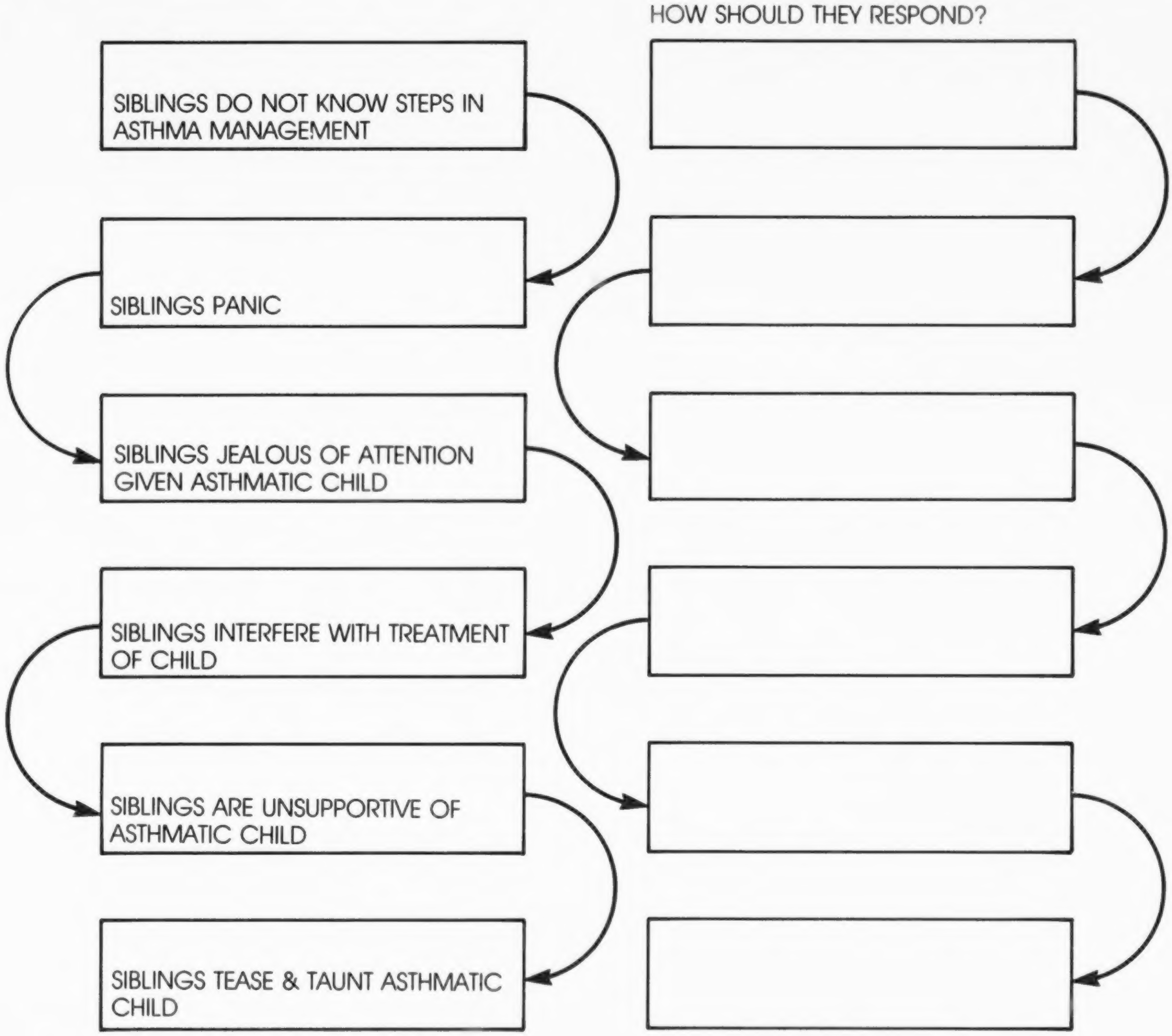
FLOW CHART 13. **APPROPRIATE AND INAPPROPRIATE WAYS A CHILD CAN RESPOND TO AN ASTHMA ATTACK**


APPROPRIATE CHAIN
CHILD SEEKS HELP WHEN NECESSARY
CHILD REMAINS CALM
CHILD DRINKS AMPLE LIQUID DAILY; HENCE HE IS NOT DEHYDRATED
CHILD BEGINS TO PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD KNOWS PROPER WAY TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CAN MONITOR SEVERITY OF ATTACK
INAPPROPRIATE CHAIN
CHILD DOES NOT SEEK NECESSARY HELP
CHILD PANICS
CHILD DOESN'T DRINK PROPER AMOUNT OF LIQUID DAILY
CHILD DOESN'T PERFORM STEPS REQUIRED TO ABORT ATTACK
CHILD DOESN'T KNOW HOW TO DISPENSE MEDICATIONS TO HIMSELF
CHILD CANNOT MONITOR SEVERITY OF ATTACK

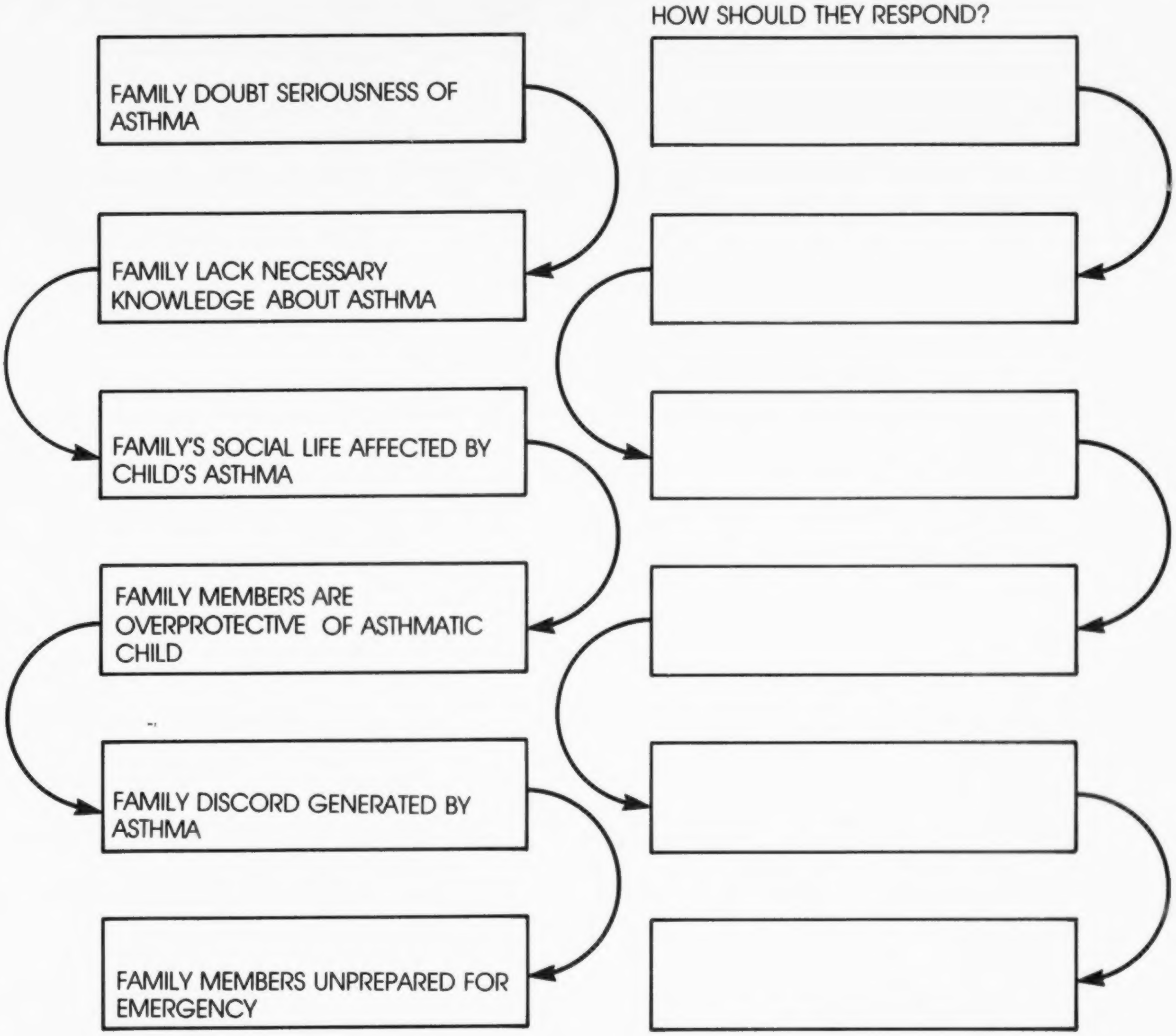
FLOW CHART 14. **CHAIN OF INAPPROPRIATE PARENTAL BEHAVIORS MADE IN RESPONSE TO A CHILD'S ASTHMA ATTACK**


HOW SHOULD THEY RESPOND?
PARENTS DISAGREE ABOUT ASTHMA
PARENTS DO NOT PERFORM MANAGEMENT STEPS
PARENTS WAIT TOO LONG TO INITIATE TREATMENT
PARENTS DISAGREE ABOUT ASTHMA MANAGEMENT
PARENTS PANIC
PARENTS OVERPROTECTIVE OF ASTHMATIC CHILD

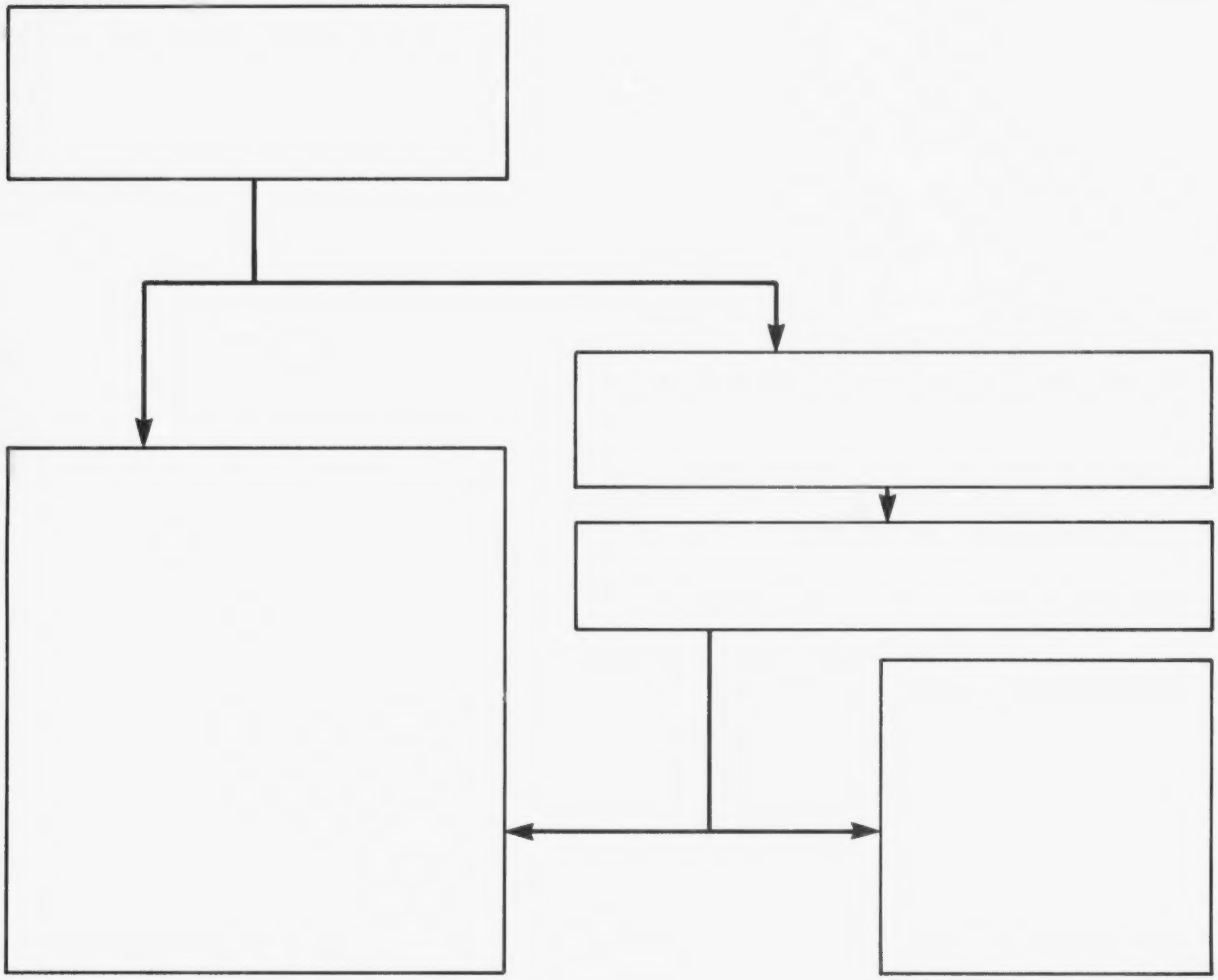
FLOW CHART 15. **CHAIN OF INAPPROPRIATE BEHAVIORS BY SIBLINGS TO ATTACK SUFFERED BY BROTHER OR SISTER**


HOW SHOULD THEY RESPOND?
SIBLINGS DO NOT KNOW STEPS IN ASTHMA MANAGEMENT
SIBLINGS PANIC
SIBLINGS JEALOUS OF ATTENTION GIVEN ASTHMATIC CHILD
SIBLINGS INTERFERE WITH TREATMENT OF CHILD
SIBLINGS ARE UNSUPPORTIVE OF ASTHMATIC CHILD
SIBLINGS TEASE & TAUNT ASTHMATIC CHILD

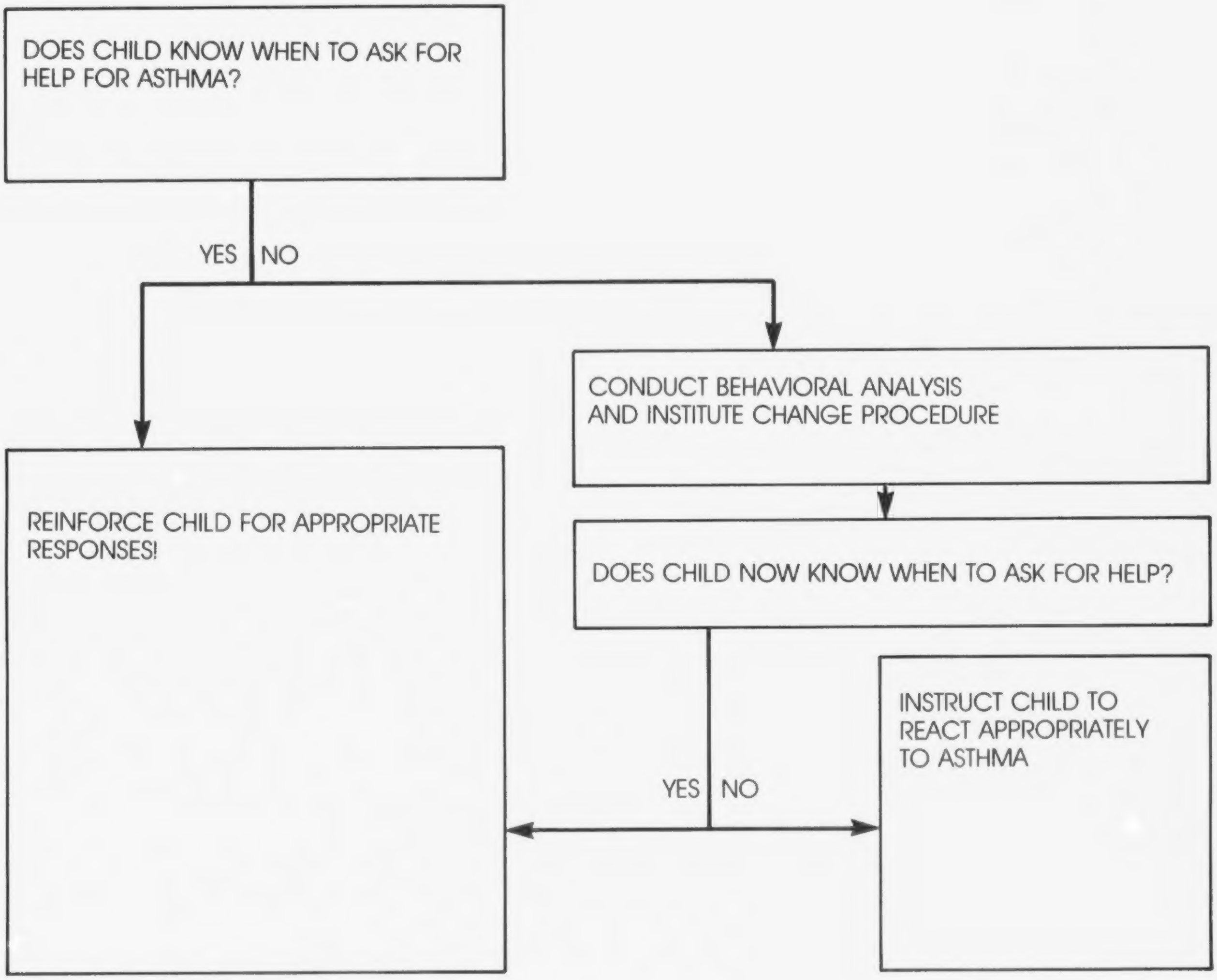
FLOW CHART 16. **CHAIN OF INAPPROPRIATE BEHAVIORS BY FAMILY MEMBERS MADE IN RESPONSE TO A CHILD'S ASTHMA ATTACK**


HOW SHOULD THEY RESPOND?
FAMILY DOUBT SERIOUSNESS OF ASTHMA
FAMILY LACK NECESSARY KNOWLEDGE ABOUT ASTHMA
FAMILY'S SOCIAL LIFE AFFECTED BY CHILD'S ASTHMA
FAMILY MEMBERS ARE OVERPROTECTIVE OF ASTHMATIC CHILD
FAMILY DISCORD GENERATED BY ASTHMA
FAMILY MEMBERS UNPREPARED FOR EMERGENCY

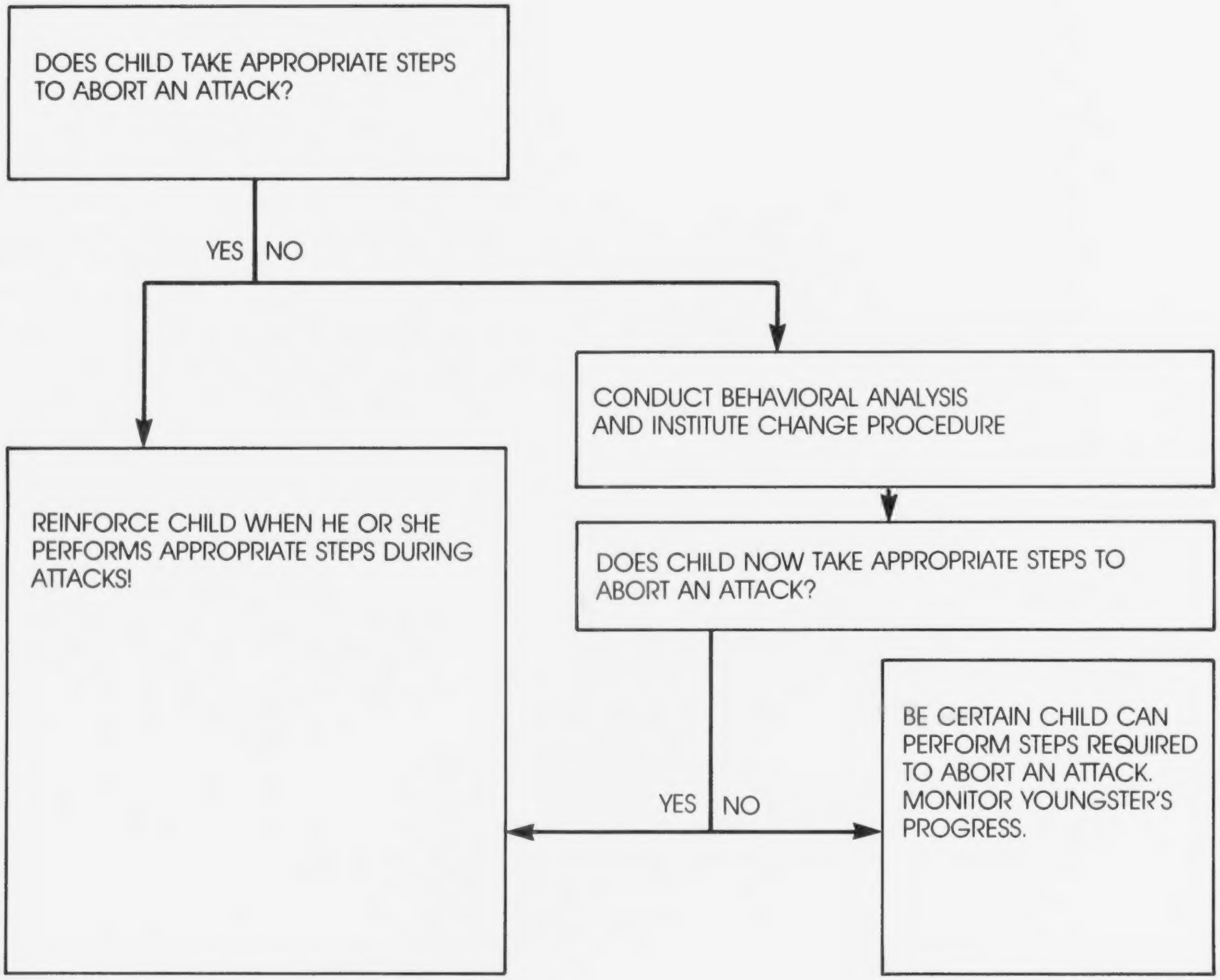
FLOW CHART 7. **PROBLEM-SOLVING FLOW CHART**



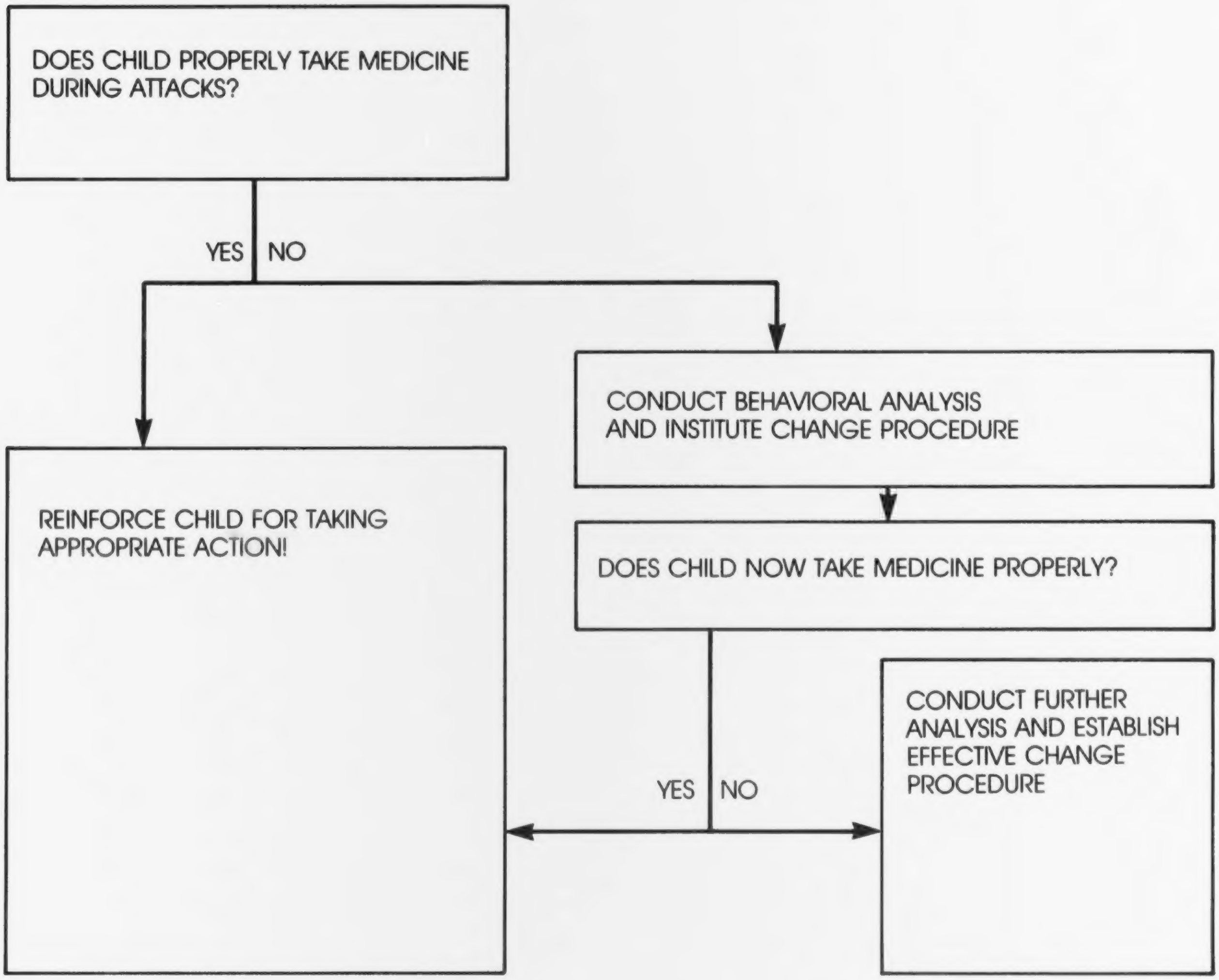
FLOW CHART 17. **MANAGING ATTACKS: ASKING FOR APPROPRIATE HELP**


DOES CHILD KNOW WHEN TO ASK FOR HELP FOR ASTHMA?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR APPROPRIATE RESPONSES!
DOES CHILD NOW KNOW WHEN TO ASK FOR HELP?
INSTRUCT CHILD TO REACT APPROPRIATELY TO ASTHMA
YES
NO

FLOW CHART 18. **MANAGING ATTACKS: TAKING APPROPRIATE STEPS**


DOES CHILD TAKE APPROPRIATE STEPS TO ABORT AN ATTACK?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
DOES CHILD NOW TAKE APPROPRIATE STEPS TO ABORT AN ATTACK?
REINFORCE CHILD WHEN HE OR SHE PERFORMS APPROPRIATE STEPS DURING ATTACKS!
YES
NO
BE CERTAIN CHILD CAN PERFORM STEPS REQUIRED TO ABORT AN ATTACK. MONITOR YOUNGSTER'S PROGRESS.

FLOW CHART 19. **MANAGING ATTACKS: TAKING MEDICINE PROPERLY**


DOES CHILD PROPERLY TAKE MEDICINE DURING ATTACKS?
YES
NO
CONDUCT BEHAVIORAL ANALYSIS AND INSTITUTE CHANGE PROCEDURE
REINFORCE CHILD FOR TAKING APPROPRIATE ACTION!
DOES CHILD NOW TAKE MEDICINE PROPERLY?
YES
NO
CONDUCT FURTHER ANALYSIS AND ESTABLISH EFFECTIVE CHANGE PROCEDURE

HOW TO PRACTICE **BELLY BREATHING**

1. Lie on the floor, bend your knees, keep your feet on the floor, and put one hand on your chest and the other hand on your stomach.

2. Breathe in through your nose, and make your stomach get round like a ball. Your chest should not move.

3. Blow all the air out through your mouth with your lips pursed, and use the hand on your stomach to help you push all the air out. Your stomach should be flat.

Practice belly breathing 10 times, slowly, making sure that your chest remains still. Try practicing this twice a day.

Whenever you have a hard time breathing, sit, leaning forward with a straight back, arms on your knees. Now breathe through the nose, then blow all the air out through the mouth slowly, keeping your chest still. Breathing this way may make you feel better and less tired.

PARENTS' SESSION **SEVEN**

POSSIBLE CONSEQUENCES OF ASTHMA

GOALS

- To examine and discuss potential problem areas that may arise as the result of having asthma.
- To gain control over possible consequences of asthma.

RESOURCES

Leader Background Material:
  Possible Consequences of Asthma
  Annotated Checklist: Possible Consequences of Asthma or its Medications
  Leading Questions for Discussion of Checklist
Handout:
  Checklist: Possible Consequences of Asthma or its Medications

ACTIVITY LIST

Activity	**Leader Background**	**Handouts**
Discussion of Consequences	Possible Consequences of Asthma Annotated Checklist: Possible Consequences of Asthma or Its Medications Leading Questions for Discussion	Consequences Checklist
Child's Responses		
Physical Changes		
Family's Responses		

PARENTS' SESSION SEVEN

POSSIBLE CONSEQUENCES OF ASTHMA—TEACHING NOTES

Orientation for the Leader

Many of the topics listed under behavior of the child and appearance of the child refer to the side effects of long-term steroid use. However, these same effects may be caused by other personal or physical factors and may not be related to the steroids or the asthma at all. If a child is not taking steroids, some of the traits may be related to asthma and others may not.

What is important is for parents to help their children develop socially and physically as fully as possible and not to hold the child back out of fear.

It is also important not to blame everything on asthma. Many alternative approaches can be worked out to have the child's and the family's life operate as normally as possible.

The purpose of the group is to allow parents to talk about these things, to learn from each other, to see things in a new light, and to help each other come up with new solutions.

As other sessions, certain themes should be stressed either directly or indirectly by reinforcing comments consistent with each of the following points:

1. Finding out the reasons why any of the consequences are occurring and working with the underlying reason to correct the situation.
2. Encouraging direct communication with the child, both in finding reasons and in devising solutions.
3. Normalizing family life as much as possible.
4. Having parents *not* emphasize asthma in the child's life.

Welcome and Review

Are there any questions or comments about last week's session?

Did anyone handle any asthma-related problems differently because of last week's discussion?

Has anyone noticed any changes in how you or your child handle asthma episodes since the sessions started?

Were any of the suggestions we came up with last week helpful in dealing with concurrent conditions?

Allow time for participants to contribute to discussion. Encourage responses from everyone.

Discussion of Possible Consequences of Asthma Checklist

Today we are going to discuss the possible consequences of asthma.

Distribute "consequences" checklist.

Explain what is meant by consequences.

definition of consequences

Consequences are behaviors or traits that may occur as a result of asthma or its medications.

qualification

The items on this list are *possible* consequences of asthma. A child or a family may exhibit some of these behaviors but may feel that the behaviors are not asthma-related.

instructions

Please read the list and check items that occur in your family or are of particular concern to you.

Allow time for parents to read and check items.

Today we will be discussing items on this list and will try to find ways to solve problems. The goal is to be able to lessen any negative effects that your child or your family may be experiencing.

Some of the items may not be related to asthma, but they may be of concern to you. It is probably not worth spending time determining whether a particular behavior is asthma-related or not. What is important is to help each other deal with situations that are of concern to you.

Child's Response to Asthma

sample opening questions

Did anyone check the first item under child's response to asthma?

We will cover the child's response to asthma first.
Which item do you wish to discuss?
Which item is of most concern to you?

discussion hints and procedures

Proceed with an item by item discussion.
As discussion of one item winds down, ask if anyone checked the next concern under the major heading.

Other comments to use to start a new topic include:
Does your child show any of these responses?
Has anyone had experience with the next item?

To keep discussion moving and to bring in other members of the group, you can use responses such as:
How do you deal with that situation?
How would someone else handle this?
What do you think, ______________________________ (name)?
(name)?
What would you do in that situation, ______________________________
What else could be done?
How many of you also feel that way?
Does anyone have a different opinion?

In general, let the group determine the pace of the discussion. If questions or comments arise, refer them back to the group.

Handling Issues That May Arise

Many of these situations arise when a child with asthma is over protected or severely restricted in activities. This may be a good time to help parents who are restrictive to work out ways to let their children do more.

However, these same responses in other children may not be due to asthma at all but may be related to the age of the child and the degree of maturity. Things may get better with time. Also the child may just not be physically well and may not want to be active for reasons other than the asthma. Maybe the child is just shy or needs more practice with sports activities.

As the child's asthma self-management practices improve, his/her self-confidence will increase. It will be easier for the child to be matter-of-fact about asthma and to feel confident doing more things because he/she will know how to manage and prevent attacks.

There are no easy solutions or suggestions for these issues. The best way to prepare for the discussion is to have a thorough understanding of the material in the earlier sessions.

Physical Changes

sample opening comments

Now let's talk about the physical changes that may occur as a result of asthma. Most of the items are due to the side effects of steroids. However, even if your child is not taking steroids some of these things may happen anyway.

Are any of your children taking long-term steroids?
Does your child show any of these physical changes?
How have you dealt with them?

Have you encountered any of these problems?
Did you encounter any of these in the past?
How did you deal with them?
How can you help your child overcome these problems?

discussion hints and procedures

Allow time for discussion. Encourage responses from everyone. Use the suggestions for moving discussion and drawing people in from the other sections and sessions.

Handling Issues That May Arise

These traits are common side effects of long-term steroid use. However, these same traits may also occur in children who are not taking steroids.

For children with severe asthma, parents must understand that sometimes there is no choice. Their children have to take steroids regularly or be sick with asthma all the time. Having asthma all the time may not be better than putting up with the side effects of the steroids. Severe asthma by itself can also limit the child's health and activities. When steroids are discontinued, growth often resumes and the obesity may go away.

Sometimes the side effects of steroids can be lessened by changing the schedule or dosage. Steroids can be given every other day instead of every day. Inhaled steroids might be prescribed instead of oral forms. The amount of the dose might also be reduced. It may be helpful to ask the doctor about these options, but for some cases, no change may be possible.

Other precautions to remember about taking steroids:

Inform the doctor if the child becomes ill with the flu, chicken pox, or other infectious disease.

If the child needs surgery or is in an accident, the attending emergency personnel should be told that the child is taking steroids.

The child on steroids should not stop taking these drugs abruptly. If the doctor decides to discontinue the steroids, the dose should be gradually reduced.

Family's Responses

sample leading questions

Do you recognize any of these as your family's responses?

How do you think you could deal with these problems?

discussion hints and procedures

Allow discussion and encourage responses from everyone. Proceed item by item. Use and adapt the suggestions for moving discussion and drawing people in from previous sections and sessions.

Handling Issues That May Arise

There are no easy solutions or suggestions for the items under Family's Response to Asthma. If someone reveals a situation which the leader and the group feel unqualified to discuss, suggest that the participant talk to a professional counselor about it. The longer a problem has existed, the more difficult it will be to change.

Sometimes the problems can be helped by working on ways to normalize family life and by spending more time doing family activities instead of worrying about the asthma. Giving parents time to be away for awhile and to do things with other adults is important too. Finding a trusted babysitter and following some of the tips offered in the handouts from session 1 may be helpful in accomplishing these goals.

Many of the asthma-related problems listed under Family's Response to Asthma or Child's Response to Asthma can be helped by better asthma management and by learning to speak assertively to others about asthma issues.

As the child gains confidence in his/her ability to manage the asthma independently, some of the asthma-related situations may improve.

Conclusion

We've talked today about many troubling things that occur as a result of your child's asthma.

These problems *can* be solved with hard work and patience. You'll notice a big improvement as your child becomes a better asthma manager.

Remember that basically, your child is a normal person who happens to have asthma sometimes. Viewed in that light, the asthma can be de-emphasized and its importance lessened.

Have a good week, everyone!

POSSIBLE CONSEQUENCES OF ASTHMA

Leader Orientation

There are no easy solutions for most of the problems listed in the Possible Consequences of Asthma or its Medications checklist. The suggestions listed are provided as ideas to generate class discussion. The best guide for discussing these items is a thorough understanding of the concepts that have been presented in earlier sessions. While most concerns can be problem solved by you and the group members, if someone reveals a situation which you or the group feel unqualified to discuss, suggest that a professional counselor be consulted. The longer that a problem has existed, the more difficult it will be to solve.

The items on the annotated checklist are divided into three major categories: the child's response to asthma, physical changes resulting from the condition itself or from medications needed to control it, and the family's response to asthma. The class participants may have additional items to add. Welcome their suggestions, and try to stimulate discussion and elicit innovative ways to deal with these problems.

Child's Responses to Asthma

Each item listed in this section could indicate a serious problem that can affect the child's mental health. Each item could also describe many children's behavior at some time or other. A child who is currently sick at home with asthma can be expected to talk about it, how he/she hates asthma and being sick. However, having asthma should not be the most important activity in a child's life, nor what he/she talks about most.

The group discussions should help the participants understand the role asthma plays in their child's life. From the group interactions it is hoped that parents will be able to analyze their child's behavior and decide if an item that is checked is an infrequent occurrence or the usual state of affairs.

Encourage anyone with a question about the seriousness of a problem to talk to the group about it, and seek the opinions of others who know the child, such as teachers, scout leaders, etc. Most items in this section could describe the behavior of any child who does not have a good feeling about him/herself. This is variously described as having a "poor self-concept," "having a negative image," "a poor or weak ego"; it all means that the child doesn't feel good about him or herself, and this should be remedied.

Parents' attitudes toward the child have a big effect upon how the child feels about him/herself. By consciously changing how they react to their child, parents can usually alleviate minor problems. As previously stated, if parents are unsure about the seriousness of a problem, have them check with a professional.

Physical Changes

These items were previously covered in session 2. Ask the physician about specific problems.

Family's Response to Asthma

Each family's responses to asthma differ. Attitudes of the extended family of a child with asthma also can affect how the child looks at him/herself and the illness. But if the parents are consistent in their attitudes and responses, most children can handle differing attitudes from their larger extended family. Most children readily learn that grandparents dote on them, and parents do not. Parents who fear that others close to the child will affect the child's development negatively should discuss with those others the importance of the child's self-management efforts.

Allow the child to help make decisions about the type of contact he/she has with people in the family if there is an asthma-related problem. If Grandmom will not stop smoking in the child's presence, you and the child must decide together what course of action to follow.

ANNOTATED CHECKLIST: POSSIBLE CONSEQUENCES OF ASTHMA OR ITS MEDICATIONS

This checklist is provided as an aid to the group leader conducting the discussion of the topics covered in this session. The annotated list consists of the same items that appear on the participants' checklist. Each item is followed by suggested solutions or sources of background information the teacher can use to answer questions, offer ideas to parents, or direct the discussion. Many of the concerns are discussed in detail in the Leader Background Material for session 7. Space has been left for the leader to write down key words and reminders to help you with the discussion. Feel free to add anything that is useful in responding to questions and concerns or to note helpful solutions offered by participants in the asthma self-management groups.

Child's Responses to Asthma

____ *Talks often about asthma?*
Encourage other interests.
Ignore talk of asthma.
Make sure you spend time with child when she/he is well.

____ *Avoids participating in activities, new situations, meeting new people.*
Try to determine cause; be as positive as possible when child engages in new activities.
Get idea across that it is OK to try new activities, new things are fun.
Help child feel confident that she/he can handle any problems that arise.

____ *Gets depressed.*
Occasionally feeling down is normal.
If you see signs of depression that worry you, get a professional evaluation.

____ *Avoids standing up for him/herself.*
Foster the child's belief in his/her own rights.
Encourage child to make decisions about things that affect his/her life.
Take his/her opinion into consideration.
Positively reinforce the child for stating his or her beliefs.

____ *Is not accepted by classmates.*
Does the child know how and have the opportunity to interact with other kids?
Encourage and reinforce attempts by the child to socialize with other children.
Choosing to be alone sometimes is healthy, don't push too hard.

____ *Is often angry.*
Examine reasons for anger.
Are there identifiable objects of anger or is it general?
Keep track of child's incidents of anger to help you decide.
Seek professional help if anger is generalized.

____ *Is overly dependent.*
Analyze the behavior of the adults involved in the child's care.
Have they fostered decisionmaking and the child's attempts toward independence?
Plan a course of action that rewards independent behavior.

____ *Has fears or phobias.*
Mild fears may be alleviated by talking about them and practicing new behavior patterns.
More serious fears may need professional help.

____ *Pretends or exaggerates illness.*
Be sure child not reinforced for being ill.
Limit pleasurable activities when child is ill.
Stress the wide range of activities that the child can do when well.

____ *Uses asthma for own gain.*
Same as above.
Be sure to examine adults' behavior toward the child; if there is no reinforcement from adults, there will be less reason to use asthma.

____ *Other.*

Physical Changes

____ *Child does not appear healthy.*
Check with physician.
Encourage good health practices.
Encourage outdoor activities.
Follow directions on meds to minimize side effects.

____ *Child is obese.*
Steroids increase appetite and cause water retention; special precautions on diet and a regular exercise program may help.
It is far easier to keep weight off than to lose it once it's gained.
Inhaled steroids may help some of the side effects.
Check with physician.

____ *Child is short for age.*
Steroids suppress linear growth; when discontinued, there frequently is a growth spurt.
Size can greatly affect how others view child.
Best insurance against problems is to help child develop positive self-image and develop skills in areas where height is insignificant.

____ *Physical or sexual development is delayed.*
Puberty is delayed by some asthma medications.
Check with your physician if you have specific concerns.
Medication needs may fluctuate because of physical changes of puberty.

____ *Other.*

Family's Responses to Asthma

____ *Family members doubtful that child has asthma.*
Give family printed materials from recognized authorities.
Have them talk with physician.

____ *Family members lack basic knowledge of asthma.*
Give family printed materials from recognized authorities.
Have them talk with physician.

____ *Family members don't know how to respond to asthma emergency.*
Go over EMERGENCY SHEET together.

____ *Family members do not mention asthma to friends.*
If family is ashamed of asthma, try to educate them.
Parents can set a good example by openly referring to asthma when there is a reason to do so.

____ *Family prevented from planning activities because of asthma.*
Plan activities and carry them out; cancel if necessary, but try not to.
Search for babysitters before the need comes up; medical students or other parents of children with asthma are often willing to babysit.
If an adult must stay home, have the rest of the family go anyway.

____ *Parents' social life upset because of asthma.*
All parents need private, special times with their peers.
The strain on parents because of asthma can be great, they need time to refuel their energy sources.
Find babysitters and use them.
The child gains by knowing she/he is trusted to be left with someone other than parents.

____ *Family discord associated with asthma.*
Pinpoint problem areas and discuss issues with those involved.
Problem-solve specific issues.

____ *Family members resentful or jealous of child with asthma.*
Recognizing that there is resentment and that it is understandable may help clear the air and start a discussion.
To guard against resentment try to spend equitable amount of time with all family members.

____ *Family members overprotective of child with asthma.*
Parents often model overprotection.
Discuss the matter of overprotection with those involved.
Overprotection is dangerous and can stunt the child's mental growth and development.

LEADING QUESTIONS FOR POSSIBLE CONSEQUENCES OF ASTHMA SESSION 7

These questions are offered to the group leader as suggestions for stimulating discussion among the parents. It is clear that many of the same questions are applicable to different items. The purpose of the discussion is to lead the parents to an understanding of *why* the consequences are occurring. Keep in mind that some consequences may not be related at all to the fact that the child has asthma.

Child's Responses to Asthma

Child often talks about asthma.

- Why does the child talk a lot about asthma?
- What can you do about the underlying reason?
- Does he/she do it to get attention?
- Is it because he/she does not feel well most of the time because the asthma is not under control?

Child avoids participating in activities.

- Why does the child avoid activities?
- Is it because the child is afraid of getting an attack? If so, is there anything the child can do to prevent attacks?
- Is it because the child is uncoordinated or not physically adept?
- Is it because the child does not get enough exercise and is out of condition?
- Is it because the child is shy?
- Is it because some activities are just not fun for the child?
- Is it not related to asthma at all?
- Does he/she like scouts or social groups better than sports?
- What's behind the child's reluctance? For example, is the activity in an old building where the dust triggers attacks?
- Is child avoiding activities because other children tease him/her about getting sick?

Child avoids going places.

- (Many of the same questions are applicable here.)
- Is child afraid to be away from parents?
- Does child know who to call in an emergency?
- Does child know what medications to take if an attack should occur?
- Does the child know when to take medication?
- Does the child have access to medication if it is needed?

Child avoids new situations.

- (Many of the same questions are applicable here.)
- Why is the child afraid of new situations?
- Is he/she afraid of what might happen if an attack occurs?
- Can you "act out" a new situation with the child to reassure him/her?

Child avoids meeting people.

Is the child's self-esteem low because he/she has missed a lot of school and feels he/she is a weakling?

Is the child afraid of persons outside of the family because of what he/she anticipates as negative reactions to the illness.

Child gets depressed.

Does child have "Why me?" feeling?

Is child not getting enough oxygen?

Is child depressed because he/she is not healthy?

Does the child feel he/she has no control over his/her physical condition?

Child avoids standing up for him/herself.

Are self-management practices helping the child be more assertive?

Is child learning to be responsible for his/her own care thereby increasing self-confidence?

Child is not accepted by classmates.

(Many of the same questions are applicable here.)

Is this related to child's asthma or is there some other reason?

Child is often angry.

Is the child angry because of asthma or because of something else that is going on in his/her life?

Child is overly dependent.

Why is this behavior occurring?

(Again, many of the same questions are applicable.)

Child has fears or phobias.

Are these fears or phobias really related to the asthma?

Child pretends or exaggerates illness.

Does child get attention when healthy or only when sick?

How do *you* react when the child is ill?

How do you avoid giving too much attention when you are legitimately concerned?

Child uses asthma for his/her own gain.

Does this ever really happen?

Have you ever observed it?

Do you give the child attention and stroking at other times so the child does not need to resort to this tactic?

Are you afraid that this is a possibility, that is, that your child will use illness to manipulate you?

Physical Changes

Child does not appear healthy.

Is the child healthy?

Is there is a reason for the child to be pale? Perhaps he/she is not breathing as well as necessary for good oxygenation?
Is the child exercising enough?
What can you do to improve the child's health?
Is the child's diet compromised in an attempt to avoid food triggers?

Child is obese.
Is obesity a side effect of medication? If so, are there medication alternatives?
Is child eating and exercising properly?

Child is short for age.
Is stature related to medication use?
Is short stature hereditary?

Child's physical or sexual development is delayed.
Is this a side effect of steroid treatment?

Family's Responses to Asthma

Family members doubtful that child has asthma.
Why are they doubtful?
What is happening to make them doubtful?
Do they not believe that asthma is a real problem?

Family members lack basic knowledge of asthma.
Have educational materials on asthma been shared with the extended family?

Family members don't know how to respond to an asthma emergency.
Have you written down the procedure to follow in an emergency.

Family members do not mention asthma to friends.
Are they afraid that they will be unable to obtain babysitters?
Do friends not believe asthma is a real problem?
Are they afraid friends will think they are "bad parents"?

Family prevented from planning activities because of asthma.
Is the fear of an asthma attack the reason?
Is it too much trouble to be prepared for an emergency?

Parents' social life upset because of asthma.
Are the costs of asthma treatment leaving too little money for recreation?
Do the parents feel guilty about leaving the child in the care of others?

Family discord associated with asthma.
Are parents blaming each other for the condition?
Are other children not receiving enough attention?
Is the disease draining the family's financial resources?

Family members resentful or jealous of child with asthma.
Is this really a problem?
Can you think of ways to deal with this problem?

Family members overprotective of child with asthma.
Do family members understand the necessity of promoting the child's independence?

CHECKLIST: POSSIBLE **CONSEQUENCES** OF ASTHMA OR ITS MEDICATIONS

Directions: Check (✓) any area(s) of concern.

Child's Responses to Asthma

____Talks often about asthma
____Avoids participating in activities
____Avoids going places
____Avoids new situations
____Avoids meeting people
____Gets depressed
____Avoids standing up for him/herself
____Is not accepted by classmates
____Is often angry
____Is overly dependent
____Has fears or phobias
____Pretends or exaggerates illness
____Uses asthma for own gain
____Other ________________________________

Physical Changes

____Child does not appear healthy
____Child is obese
____Child is short for age
____Physical or sexual development is delayed
____Other________________________________

Family's Responses to Asthma

____Family members doubtful that child has asthma
____Family members lack basic knowledge of asthma
____Family members don't know how to respond to asthma emergency
____Family members do not mention asthma to friends
____Family prevented from planning activities because of asthma
____Parents' social life upset because of asthma
____Family discord associated with asthma
____Family members resentful or jealous of child with asthma
____Family members overprotective of child with asthma
____Other ________________________________

Other

____Other questions or concerns about asthma not discussed. ____________

PARENTS' SESSION EIGHT

PROBLEM SOLVING

GOALS

- To practice problem solving asthma problems.
- To answer any questions left from other sessions.

RESOURCES

Leader Background Material:
  Suggested Solutions for the 20 Problems
  Answer Key for Adult Attitude Survey
  Answer Key for Asthma Information Quiz

Handouts:
  Twenty Problems
  Adult Attitude Survey
  Asthma Information Quiz
  Program Evaluation

ACTIVITY LIST

Activity	**Leader Background**	**Handouts**
Discussion of 20 Problems	Suggested Solutions for 20 Problems	Twenty Problems
Adult Attitude Survey (optional)	Answer Key for Adult Attitude Survey	Adult Attitude Survey
Asthma Information Quiz (optional)	Answer Key for Asthma Information Quiz	Asthma Information Quiz
Evaluation		Program Evaluation

PARENTS' SESSION EIGHT

PROBLEM SOLVING—TEACHING NOTES

Orientation for the Leader

This session serves as a review and encourages the class participants to come up with concrete solutions to concrete problems. Your role is simply to keep the discussion going and encourage participation by all class members. Use the Leader Background Material for session 8 as resource material; suggested solutions to the problems are provided. Stress planning ahead to solve most problems.

The Adult Attitude Survey and Asthma Information Quiz are optional but are useful if you wish to assess changes in attitudes and knowledge. Compare the answers provided in session 1 with those obtained in this session.

Welcome

Any questions or comments from last week?

Did anyone deal with an asthma problem during the week in a way you'd like to share with us?

Did anyone have a special problem that you'd like some help in solving?

Discussion of Twenty Problems

▮ **Hand out Twenty Problems.**

basic information

This is a list of asthma-related problems that different families have encountered. Maybe a few of them will be familiar to you. What I'd like you to do is read them over and decide how you would handle each situation. Then we'll discuss all of the solutions. Remember that a solution that will work for one family may be totally impractical for another family.

▮ **Allow time for reading and problem solving**

discussion

Which problem should we discuss first?

▮ **Encourage discussion of all the problems**

Are there any final questions or concerns?

optional postprogram survey

Adult Attitude Survey and Asthma Information Quiz

You may recognize these forms from our first session.

▮ **Hand out Adult Attitude Survey and Asthma Information Quiz.**

I'd like you to answer them once again so that we can see whether our Living with Asthma classes have been helpful and informative.

▮ **Allow time for completion of survey and quiz; collect them.**

Evaluation

This evaluation will help us plan our next Living with Asthma course. Please answer all the questions as honestly as you can.

If you have comments, please include them. Remember that negative comments can be as helpful as positive ones in planning future courses.

- **Distribute program evaluation form.**
- **Allow group time to complete forms; collect them from participants.**

conclusion

I hope all of you and your children have enjoyed the Living with Asthma course. More important, I hope you've learned lots of ways to manage asthma better. Try to keep in touch with each other. You now have an "asthma support group" to help you when you're having asthma-related problems with your child. Good luck to all of you!

Now let's join the children for our farewell party!

SUGGESTED SOLUTIONS FOR THE 20 PROBLEMS

There are many ways to deal with these problems. The following are suggestions. Other ideas developed by the group can be written in.

1. Camping

Stay calm and help communicate calmness to your child. Get away from the cause of the attack if possible. Have the child change clothes and wash if that is appropriate to the cause of the attack. Give warm liquids, remember that coffee and tea are theophylline-related substances. Tell your child that it may help him/her relax. Have the child do belly breathing. Decide whether one adult should go to get some medicine, or if the whole family should leave together.

2. Toy

Remain firm to avoid beginning a dangerous precedent. Tell the child that you will have to return home immediately to treat the wheezing if it continues. Follow up on your statement by returning home. The inconvenience of doing so will be worth keeping a bad habit from starting.

3. Meds

Discuss the problem with the child to see if he/she has any idea of what is causing the problems. Check with the physician about changing the dose or determining theophylline level, if appropriate. Have a list of problems ready when you call or visit the physician. Think about any reasons that you think may be causing the problems.

4. Appointment

Ask the child if he/she has any concerns or questions for the doctor. Make a list of all questions or concerns. Take any records you may have kept from the previous month.

5. Emergency hospitalization

As diplomatically as possible, let the staff know what treatment your child has responded to in the past. Suggest that the staff call your own doctor. Have records with you to show the staff. If you feel you need an outside arbitrator, call the hospital's patient representative. If you can get no change in treatment techniques, calmly explain to your child that this hospital does things differently from the one he/she is familiar with. Reassure the child so he/she does not become more upset.

6. Nebulizer overuse

You may want to use different strategies depending upon the child's age. One option is to keep the nebulized medicine under your supervision. The child must ask you or the school nurse for it. Explain again how dangerous it is to overuse a nebulized medicine. Explain that you want him/her to keep track of how often it is being used. Continue by saying that if the neb is needed too frequently, it may be time to check with the physician about other medicines. Also, begin to monitor the use of other meds to be sure that they are being used as prescribed. Monitor to see that the child is doing other management steps of resting and drinking fluids. She/he may be waiting until the last minute and relying upon the medicine because it is easy. Do not allow the child to build up a reliance upon the medicine. The less medication needed, the better.

7. Frequent attacks

- Is the child paying attention to early warning signs?
- Are triggers being controlled or minimized as much as possible?
- Is the child getting proper rest, food, and exercise?
- Is the child under a great deal of stress?
- Is the child getting positive attention when he/she is well?
- Is the child getting undue attention when sick?
- Is it possible the medication needs have changed because of physical changes?

Have the physician check the medication levels. Ask for a theophylline level if the child takes it on a regular basis.

8. Family tired

See MEDICATION COMPLIANCE section of the background material for session 5.

Check with the physician about changing the schedule or using longer acting forms of medication. If no changes are possible, arrange it so the administration of the 2 a.m. dose awakens only the child, or the child and one family member. Rotate the responsibility between the adults.

9. Expenses

See MEDICATION COMPLIANCE section of the background material for session 5.

Investigate insurance plans that cover medications, or try health maintenance organizations. Make sure you are treating early, it's cheaper!

10. Physical education teacher

- Send pamphlets on asthma.
- Have the doctor write a letter or call the teacher.
- See if the school nurse can discuss the problem with the gym teacher.
- Talk with the teacher and the principal.
- See background for session 6, "A word about gym teachers."

11. Younger brother

Spend special time with younger brother alone. Tell him this is because you can't spend as much time with him as you would like to when his brother is sick. At some other time, discuss asthma with both brothers. Tell the younger brother specific ways he can help when the older one is sick, how glad you are when he helps. Use positive reinforcement whenever he does help, whenever he does not whine. Continue setting aside special time just for the younger brother.

12. No exercise

Encourage whole family outings: a Saturday morning bike ride or walk, badminton in the evenings. Look at your style of physical activities. Parents do serve as models. Ask if there are any kinds of athletic lessons he/she should like to take. Many recreation centers have low-cost lessons and team sports. Find out if there is any particular reason why he/she is not more active. It may be a temporary phenomenon.

13. "Sicky"

Point out the positive things that he/she can do. Explain that many people have some kind of physical problem. His/hers are minor and not present all the time. Usually he/she can do whatever he/she wants to do. Encourage him/her to ignore the taunters. Ignoring unwanted behavior is the oldest and best method of dealing with bullies, malcontents, and taunters. If the child has a good self-concept, some understanding and support on your part should help the problem appear manageable.

14. Stock show

Pretreating with nebulized medication is a possibility. Let the teacher know your concerns and how to deal with them. Washing hands after petting animals helps remove most of the animal dander. Hot coffee and tea are usually available at public places. Help the child be in good physical shape by getting a good sleep the night before. Be specific about how much the neb can be used if that's appropriate. As a last resort, volunteer to accompany the class. It is best if the child learns to handle problems by him/herself, but in some situations it may be appropriate for you to help. Changing clothes and showering after encountering animals may help limit problems from dander.

15. Smoking

It will probably not help much to have Mom or Dad lecture. A talk with the physician may carry more weight as he/she can specify the problems with smoking and theophylline. Some schools have anti- and stop-cigarette smoking groups. Keeping the lines of communication open between you and your child is vital.

16. Family dog

Arrange for the dog to live with friends or a neighbor. If it is an inside pet, see if it can be an outside pet. The change will be hard on both of you, but give it a good try. Your house will need a thorough cleaning to remove all the minute accumulated collection of dander. Suggest a new nonallergic pet. Some allergists have little patience for patients who do not remove pets from the house when the pet is suspected as an allergen.

17. Asthma Management

Plan a behavioral change program using what you've learned in the group! Remember to reinforce each and every time the child does take some management steps on his/her own.

18. Moving

It could help, but there are no guarantees. Many people who do move are better *at first*, but later develop sensitivities to local allergens. Sometimes the family is so disrupted by the uprooting of the move that moving hinders rather than helps the asthma. All factors of job, friends, and family needs should be considered seriously before any decision is made. Check with the physician about allergens common to the area to which you are thinking of moving. Do a trial visit if at all possible, and spend considerable time there before finalizing any plans.

19. Questions

Why haven't your questions been answered by your physician? Be sure you maintain a list to take with you for office visits. Let the physician know ahead of time that you need time to ask your questions so he/she can plan time accordingly. In addition to gaining information from your physician, check with the American Lung Association. Go to a medical library and ask the librarian for assistance in finding answers to your questions. Remember that medical science is an exacting science only over time: it is built upon some known facts and many separately conducted studies. Frequently these studies are contradictory. Research is being conducted daily and even what was once thought to be "fact" is later proved to be misconception based on incomplete interpretations.

20. FEV-1

Ask your physician for an interpretation of terms like this. FEV-1 means forced expiratory volume, the 1 refers to 1 second. FEV-1 means the amount of air that someone can blow out of the lungs in 1 second after the greatest possible inspiration.

ANSWER KEY FOR ADULT ATTITUDE SURVEY

Compare the answers on the survey taken during session 1 with that taken during Session 8. At the end of the Living with Asthma program, parents should agree with questions 1, 4, 5, 7, 8, 10, 13, 15, 17, 19, 21 and disagree with questions 2, 3, 6, 9, 12, 14, 16, 18, 20, 23, 24, if they have adopted all the attitudes and practices associated with asthma self-management for their child. The answers to questions 11 and 22 will vary depending on individual situations.

ANSWER KEY FOR ASTHMA INFORMATION QUIZ

True/False:

1. T
2. T
3. T
4. T
5. F
6. T
7. F
8. F
9. T
10. F
11. F
12. F

Circle words:

1. inside
2. without
3. does not
4. can

Correct phrases:

1. b,d
2. c
3. a,b,c
4. b,d
5. a,c
6. c
7. b,c,d
8. b,c,d

TWENTY PROBLEMS

1. You are on a camping trip when your child begins to experience symptoms of an attack. You look for the medicine, but much to your dismay, you discover that you have left it at home. You are in a remote region and help is some distance away. What should you do in such a situation?
2. Your child's asthma attacks are triggered by crying. For this reason, you are hesitant to ever see your youngster begin to cry. However, you are in a department store and your child asks persistently for a toy. You tell him/her that you cannot afford the toy. The child begins to cry and before long, you detect a slight bit of wheezing. Should you purchase the toy to keep the youngster from crying or should you remain firm in your initial decision?
3. The asthma medications your child is taking seem to be causing some problems. What should you do?
4. You have scheduled your monthly appointment with your allergist or pediatrician. How can you best prepare for this appointment so that you and your child receive the greatest benefit from the visit?
5. You and your family are taking a summer vacation in a different part of the country. Suddenly, your child has an attack that requires hospitalization. From your casual observations, the attending staff does not seem to be treating the child in the same manner as he/she is treated at home. What should you do?
6. Your child is receiving nebulized medications. You suspect that he/she is overusing the inhaler because he/she is always requesting a fresh bottle of medication. What would be the procedure to follow under these circumstances?
7. You are certain that your child is taking medications as prescribed. He/she still seems to have considerable asthma, however. What are possible solutions to this problem?
8. There are a number of complaints from family members that, because of your child's asthma, everyone is perpetually tired. Part of this problem may be due to the fact that your child takes a dose of medication at 2 a.m. How might you solve this problem?
9. The expenses of medications are eating into the diminishing money you and your family have to live on each month. What are possible alternatives to such a difficulty?
10. Your child's physical education teacher is convinced that asthma is all in the head. How might you convince the teacher otherwise?
11. You notice that the younger brother of your child with asthma whines a lot, especially when your child is having an asthma attack. You wonder if he might be jealous. How can you help your younger son?
12. You're afraid that your child may not be getting enough exercise. He/she seems to spend free time doing quiet things around the house and shies away from anything active. You don't want to nag. How can you handle this situation?

13. You are terribly concerned because your child has just come home upset. He/she says that someone at school called her "sicky." How can you help your child in this kind of situation?
14. Your child's class is going on a special outing to the stock show, but your child is allergic to animals. You know that he/she wants to go badly. What are your alternatives?
15. Your child is pressured by his peers into smoking cigarettes. You find out that this has happened and that your child is smoking. You're concerned not only because smoking is dangerous even for those with normal lungs, but also because it can reduce the theophylline level in the blood and increase the need for medicine. What do you do?
16. You have good reason to believe that the family dog is part of the reason why your child is sick with asthma so often. Everyone in the family dearly loves the dog, but is also concerned about the health of your child. How do you finally resolve this problem?
17. You have recently started to notice how dependent your child is on you for asthma management. He/she relies on you to tell him/her when to take his/her medicine, what he/she can and cannot do, and when he/she needs treatment for his/her asthma symptoms. What steps can you take to change this pattern?
18. A friend told you that moving to another part of the country will improve your child's asthma. The thought of moving is very upsetting to you since your friends, family, and work are all here, but you would like to see an improvement in your child's asthma. Is it true that moving will help your child's asthma? What do you do?
19. You have a number of questions about asthma and its treatment which are not answered adequately by your physician. What options do you have in these circumstances?
20. A report from your physician says that your child had a certain FEV-1 value. What does this mean?

ADULT ATTITUDE SURVEY

Name ______________________________

Date ______________________________

Administrator __________________________

Directions

Please answer every question, even though it may be difficult in some cases. Put a check beneath how you feel about each statement. Remember, please be as honest as possible and answer every question.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. My observations of my child's asthma are important in helping to get the asthma under control.					
2. Missing a dose of medication won't hurt.					
3. My child needs to be watched over almost all the time.					
4. My child can do a lot to control his/her asthma.					
5. My child's like most other kids except he/she has asthma.					
6. It's hard for me to ask my doctor questions about asthma.					
7. It's important to take asthma medicine on time.					
8. My child's observations about his/her asthma are important in getting it under control.					
9. The way I raise my child has little influence on his/her asthma.					
10. Because of asthma, my child has to be more responsible than other kids his/her age.					
11. My child's asthma is under control.					

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
12. There is nothing my child can do to relieve an asthma attack before it gets bad.					
13. Eating properly can help my child's asthma.					
14. My child makes his/her asthma worse than it really is.					
15. People with asthma can be successful.					
16. My child's asthma is not affected by my attitude toward it.					
17. The more I know about asthma, the better I can help my child.					
18. My child can't do well in school because of asthma.					
19. Children with asthma should be disciplined pretty much like other children.					
20. The more medication my child could take, the better off he/she'd be.					
21. I try to be as calm as I can during my child's asthma attack.					
22. My child uses asthma to get out of things.					
23. I cannot help my child in any way when he/she is having an asthma attack.					
24. Adults don't like my child because of asthma.					

HAVE YOU ANSWERED ALL THE QUESTIONS?

ASTHMA INFORMATION **QUIZ**

Name ______________________________

Date ______________________________

True/False: Place a T for true and an F for false in the space provided.

____ 1. Coughing is frequently a symptom of asthma.
____ 2. At present there is no cure for asthma.
____ 3. Swimming is good exercise for those with asthma.
____ 4. Certain medications taken before exercise can help prevent an attack.
____ 5. Asthma medications have no side effects.
____ 6. Becoming emotional may cause an asthma attack to worsen.
____ 7. Children with asthma should be disciplined differently from other children.
____ 8. Almost everyone with asthma needs psychological help.
____ 9. There are usually other physical symptoms before wheezing is heard.
____ 10. Children with allergies to animals usually build up immunities to their own pets.
____ 11. Children learn their limits of physical activities by having their parents make them stop before they get sick.
____ 12. Too much praise makes a child demanding.

Circle the correct word(s) in each statement.

1. During an asthma attack air gets trapped (INSIDE OUTSIDE) the lungs.
2. A severe attack rarely comes on (WITH WITHOUT) warning.
3. It appears that the occasional short term use of steroids (DOES DOES NOT) have serious, immediate side effects.
4. Laughing (CAN CANNOT) be a cause of an asthma attack.

Choose *as many phrases as are correct* in each of the following items. There may be several for each item.

1. Status asthmaticus:
   a. The condition of having asthma
   b. A steadily worsening state of asthma
   c. An improving state of asthma
   d. Usually preventable
2. A bronchodilator is:
   a. A machine used in the hospital to force air into the bronchial tubes
   b. Any medicine that is prescribed for asthma
   c. Any medicine that helps open the bronchial tubes
   d. Any bronchial medicine that can be used in an aerosol form

3. The changes that take place in the lungs during an asthma attack include:
    a. Swelling of tissues in the bronchial tubes
    b. Production of extra mucus
    c. Narrowing of the bronchial tubes
    d. Drying of the mucous membranes
4. Important treatment steps to follow during an asthma attack include:
    a. Immediately calling a physician
    b. Drinking fluids
    c. Continuing or beginning vigorous activity
    d. Resting
5. Allergy shots:
    a. And immunotherapy are the same thing
    b. Always help someone with asthma
    c. Gradually desensitize the body to what one is allergic
    d. Contain medicine that fights the allergy
6. The best way to teach a child to take medicine on time is:
    a. Remind the child right before it is time
    b. Punish the child when he/she forgets
    c. Praise the child when he/she remembers
    d. Praise the child when he/she remembers and warn the child not to forget the next time
7. Using more bronchodilator spray (neb) than is prescribed:
    a. Cannot be harmful
    b. May mean that other medications need to be changed
    c. May mean that the asthma is not under control
    d. May worsen an asthma attack
8. Theophylline is an asthma medicine:
    a. Whose side effects are similar to steroids
    b. The amount of which can be measured in the blood
    c. That can be affected by smoking
    d. That is the primary one used in the United States

PROGRAM **EVALUATION**

Date____________________________ Name______________________________________

Please circle the letter that best completes the statement for you.

1. As a result of the individual sessions, my management of my child's asthma is____________
   a. much better
   b. somewhat better
   c. the same
   d. somewhat worse
   e. much worse
2. As a result of the individual sessions, my child's management of his/her asthma is____________
   a. much better
   b. somewhat better
   c. the same
   d. somewhat worse
   e. much worse
3. As a result of the individual sessions, my child assumes responsibility for his/her asthma__________
   a. much more
   b. somewhat more
   c. the same
   d. somewhat less
   e. much less
4. As a result of the individual sessions, my knowledge about asthma has____________________
   a. increased greatly
   b. increased a good deal
   c. increased some
   d. increased very little
   e. stayed the same
5. As a result of the individual sessions, my knowledge of child management has____________
   a. increased greatly
   b. increased a good deal
   c. increased some
   d. increased very little
   e. stayed the same
6. As a result of the individual sessions, my confidence in managing my child's asthma is__________
   a. much better
   b. somewhat better
   c. the same
   d. somewhat worse
   e. much worse

7. As a result of the individual sessions, my child's confidence in managing his/her asthma is______
   a. much better
   b. somewhat better
   c. the same
   d. somewhat worse
   e. much worse
8. As a result of the individual sessions, my child's asthma worries me______
   a. much less
   b. somewhat less
   c. the same
   d. somewhat more
   e. much more
9. As a result of the individual sessions, my child worries about his/her asthma______
   a. much less
   b. somewhat less
   c. the same
   d. somewhat more
   e. much more
10. As a result of the individual sessions, my relationship with my child is______
    a. much better
    b. somewhat better
    c. the same
    d. somewhat worse
    e. much worse

COMMENTS:______

DISCRIMINATION PROHIBITED: Under provisions of applicable public laws enacted by Congress since 1964, no person in the United States shall, on the grounds of race, color, national origin, handicap, or age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity (or on the basis of sex, with respect to any education program or activity) receiving Federal financial assistance. In addition, Executive Order 11141 prohibits discrimination on the basis of age by contractors and subcontractors in the performance of Federal contracts, and Executive Order 11246 states that no federally funded contractor may discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Therefore, the National Heart, Lung, and Blood Institute must be operated in compliance with these laws and Executive Orders.